

**Battle Command Training Program (BCTP):
Front End Analysis**

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BDM Federal, Inc.

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**BATTLE COMMAND TRAINING PROGRAM (BCTP)
FRONT END ANALYSIS**

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U. S. Army Research Institute

BATTLE COMMAND TRAINING PROGRAM (BCTP)

FRONT END ANALYSIS

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BATTLE COMMAND TRAINING PROGRAM (BCTP) FRONT END ANALYSIS

I. INTRODUCTION

Background

Since its establishment in 1981, the National Training Center (NTC) at Fort Irwin has had a major positive impact on the combat readiness of Army maneuver battalions and their supporting arms. The influence of NTC has extended well beyond the actual training accomplished during unit rotations, to the training priorities and standards used by units at home station and the validation and standardization of combined arms practices and procedures at task force level and below. Recognition of the NTC's benefits has led to a series of training initiatives, to include expanding the role of the brigade at NTC, implementing a similar battalion level center for light forces at Fort Chaffee (Joint Readiness Training Center [JRTC]), and establishing a center for heavy forces in Germany (Combat Maneuver Training Center [CMTTC]).

In contrast, the Army had not developed a similar combat training environment for larger units. Expense and geographical limitations precluded the use of Fort Irwin or the other Combat Training Centers (CTCs) to train divisions and corps. The absence of an advanced training and feedback mechanism for larger formations remained conspicuous in the areas of combined arms operations, synchronization of operations and logistics, and battlefield command and control. All of these were areas in which AirLand Battle Doctrine, even though generally accepted, had yet to be translated into consistently proven tactics, techniques, and procedures. Just as was the case with battalions before the development of the NTC, larger unit commanders lacked the standards or effective means to judge unit proficiency in these areas. Additionally, the Army's doctrine developers required an adequate basis for assessing and revising doctrine for larger units.

To remedy this problem, the U.S. Army established the Battle Command Training Program (BCTP) in 1987. The BCTP is a Chief of Staff, Army (CSA) initiative to apply computer technology as a tool to train the war planning, war fighting and decision making skills at the division, corps, and higher echelons. Simulation through computers offered the only reasonable alternative for training large units. The Army initiated extensive efforts to field a family of simulations to enhance and augment the existing training programs of large units. In little more than a year, the program evolved from a small nucleus of planners and resource managers to a full fledged, advanced collective CTC where both active and reserve component units could train. The timeline shown at Figure 1 highlights the major milestones in the early life of the program.

The main purpose of BCTP is to provide a training vehicle to develop adaptive, creative general officers who are professionally competent by giving them realistic experience before an actual war. It allows senior level (executive) leaders to practice warfighting skills and to develop staff procedures and cohesion that will meet the challenges of combat and win the first battle.

BCTP immediately became a high visibility program within a high stakes arena. It received substantial fiscal support but manning was resourced austere. Initially BCTP was organized as a directorate of the Command and General Staff College (CGSC). In theory, it was to receive direction and guidance from the Deputy Commandant, but this relationship became inoperative as the program

expanded and drew the attention and support of the Commander, Combined Arms Center (CAC). CAC responds to direction from the Training and Doctrine Command (TRADOC) and is responsible for integrating the warfighting doctrine within the TRADOC community and exporting it to the field. In October 1988, BCTP reorganized under the direction of the Combined Arms Command - Training (CAC-T), designated as a CTC, and managed like its sister CTCs.

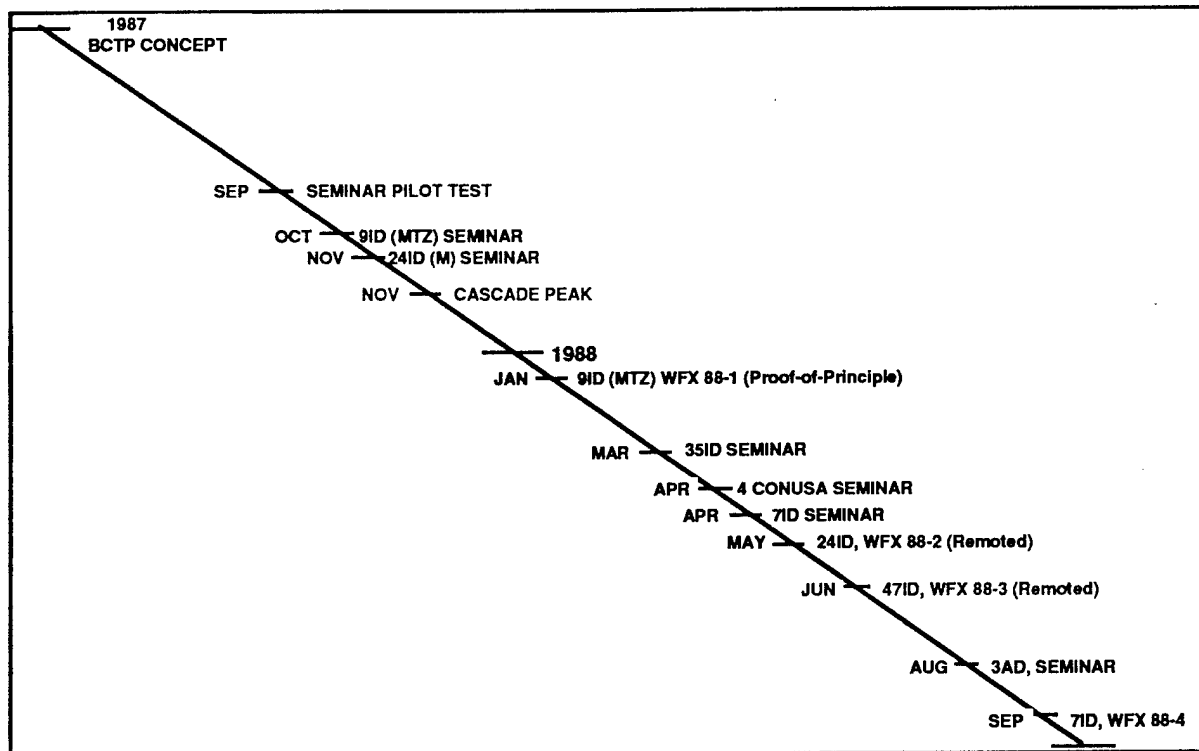


Figure 1. BCTP Operational Development Timeline

Objective

The objective of this database specification project is the development of specifications for a BCTP research database and to provide a concrete plan to improve the utility of, and accessibility to, BCTP generated training data for all current and future users. This document summarizes our understanding of the BCTP operational environment with regard to how units and staffs train, specific duties and responsibilities of BCTP and contract staff, and the data produced by BCTP processes. Our goal is to understand the data completely enough to lay the groundwork for a BCTP database that will have enduring value for a number of users in the pursuit of lessons learned, in feedback to units being trained, in the study of systemic issues affecting the Army, and as a means to enhance/improve the BCTP program itself.

II. OVERVIEW OF BCTP OPERATIONS

The Battle Command Training Program is a mobile, self-sufficient CTC, headquartered at Fort Leavenworth, Kansas. It is responsible for designing, planning, developing, and implementing collective training for the purpose of exercising Army divisions and corps. The program consists of two major initiatives: a simulation center for training and technology integration, and mobile training teams that conduct exercises at locations convenient to the player's home station. BCTP training is built around a core simulation capable of adjusting the level of resolution to the echelons being trained--initially division/brigade, later corps/division, and ultimately army/army groups. It provides a realistic, free play, tactical exercise across the spectrum of combat missions and functions. BCTP has become the focal point for integration of emerging technology such as tactical automation, knowledge engineering and decision support systems.

The primary task of BCTP is to provide the Army's division and corps headquarters a training experience and exercise capability realistically and stressfully equivalent to that provided to battalions by the NTC at Ft. Irwin, CA. The objective of BCTP is the training of creative, adaptive, and professionally competent senior leaders.

BCTP uses a training concept that consists of two distinct but mutually supporting phases (Figure 2). Phase I is a 5 day seminar and workshop held at Ft. Leavenworth for key commanders and staff elements. Emphasis of the workshop is on staff and command group team building through the development of understanding and knowledge of doctrinal concepts. Phase II of the program is a deployment to the unit home station or other designated location to conduct Warfighter Exercises (WFX). It is through the Warfighter Exercise that the performance of the Command Group and staff skills are observed and evaluated in a tactical environment. The BCTP Warfighter Exercises are the most demanding of the command post exercises (CPXs) which, in addition to their training value, also provide a rich source of performance data. During the Warfighter Exercise, the unit experiences the stress of a combat environment through simulations where acquired command and staff skills and tactical proficiencies determine the outcome of an operation. During both the seminar and Warfighter phases, BCTP support includes experienced observers/controllers (OCs) who provide feedback to units during After Action Reviews (AARs) at selected points during the exercises and a dedicated World Class Opposing Force (WCOPFOR) which actively contests the battle with the unit being trained.

BCTP seminars and Warfighters use the Corps Battle Simulation (CBS) to present decision opportunities, resolve the tactical outcomes of BLUEFOR-WCOPFOR engagements, and then provide feedback to both sides. Several methods have been developed to capture data from the CBS system and to use these data to support feedback to the training unit during seminar and Warfighter AARs, training support packages, or in a Final Exercise Report (FER).

The BCTP program provides realistic and stressful command and staff training for division and corps commanders, their staffs, and major subordinate commanders. The program emphasizes performance assessment and feedback against established Army standards via formal and informal AARs and less formal mentor/tutor relationships. BCTP supports the development of division and corps expertise in:

- Large unit operations
- Command and control
- Decision making
- Efficient, thorough, and effective staff procedures

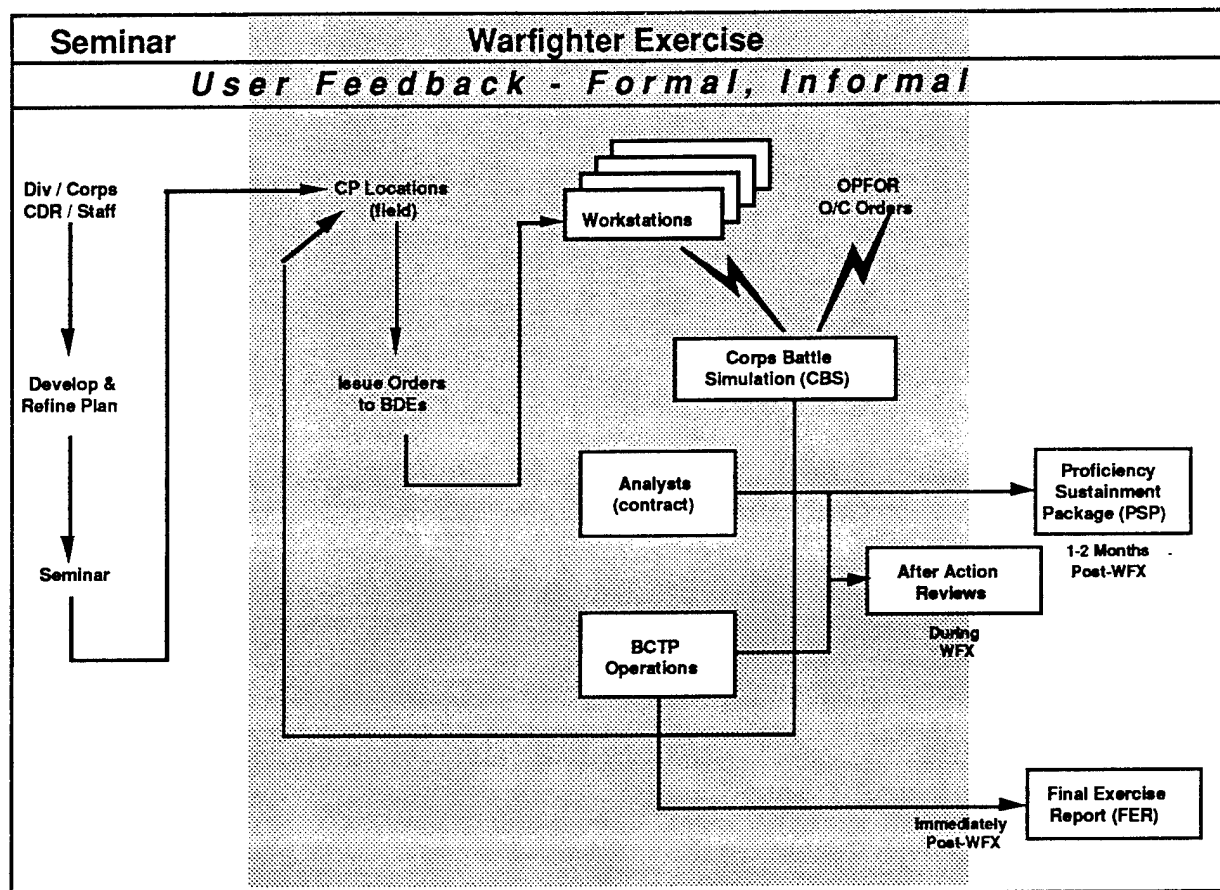


Figure 2. The BCTP Process

BCTP operations are organized by rotation, each involving a division or corps staff. The intent of the program is to conduct a BCTP rotation during the tour of every Division and Corps commander, beginning within the first six months of his assignment if scheduling and real-world operational requirements permit.

BCTP Organization

BCTP has an approved TDA, but as training requirements like the WCOPFOR have expanded, internal reorganization has been necessary. The current BCTP organization is shown in Figure 3. The headquarters operations section provides the interface between BCTP and its external environment performing such tasks as scheduling and programming. BCTP has two Operations Groups each capable of planning, preparing, and conducting division and corps level training. Each Operations Group consists of military and contractor personnel who are responsible for one unit's BCTP training rotation from "cradle to grave." With multiple training rotations each year, there are concurrent planning and execution activities going on continuously. The internal organizations of the Operations Groups are similar during each phase of a training rotation.

The Operations Groups receive support from a planning team within the WCOPFOR. The formation of the WCOPFOR created a highly trained team of threat analysts and players capable of implementing a variety of threat operating doctrine and techniques in support of unit and theater specific

Warfighters. BCTP strives for and encourages independent thought by the WCOPFOR. As a result, the WCOPFOR has gained immense credibility and respect through demonstrated competence during successive Warfighter Exercises.

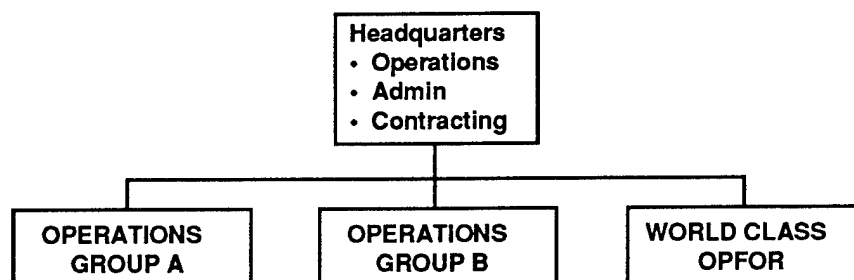


Figure 3. BCTP Organization

The BCTP training support system integrates a number of interdependent processes and functions to produce surrogate battlefield conditions, stimulation for advanced collective tasks, and a feedback mechanism needed to objectively measure unit performance and capture lessons learned. Each BCTP training rotation is unique, and each Operations Group may have as many as seven rotations active in various stages of coordination. Concurrently, corps and division commanders and staffs are also performing tasks and providing inputs that support BCTP training. This condition demands that some structure be available to guide the actions of Operations Group cells responsible for planning, preparing, conducting, and evaluating training.

BCTP Planning and Training Processes

We have attempted to isolate the significant outcomes and events that contribute to a successful BCTP training rotation. The resulting inter-dependency network of the life cycle drives the scheduling and development of most BCTP training activities. The next four charts (Figures 4-7) illustrate the inter-dependency network of life cycle events. The sequence of events is depicted by interconnected nodes along with a timeline shown at the bottom of each figure. The activities fall into discernible phases that allow the Operations Groups to manage their training and synchronization activities. Taken in isolation, the life cycle seems to afford sufficient slack time for efficient use of resources. However, in reality, the exercise load and manning levels precludes an even division of labor or refinement of procedures that might lead to qualitative improvements in the BCTP product.

Each rotation is initiated after DA DCSOPS and the MACOM schedules the unit to participate in a BCTP rotation and updates its Master Training Plan. The formal planning process (life cycle) begins as shown in Figure 4 with initial coordination between BCTP and the unit to be trained (1). BCTP continues staff coordination (2) to establish dates and locations for the Initial Planning Conference (IPC) and the Site Survey (3) (4). The BCTP Commander assigns responsibility for the training mission to one of the Operations Groups. The Operations Group designates an internal exercise planning team. Together, they develop a plan that describes what is to be accomplished, schedules activities, and identifies resource requirements.

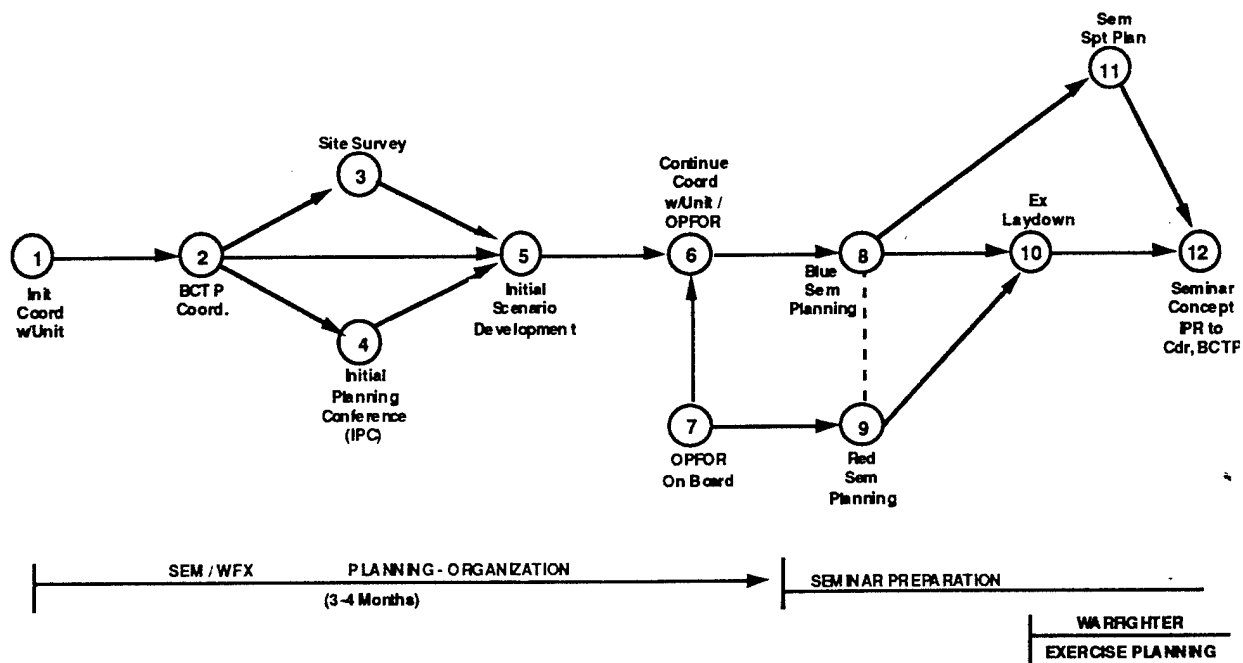


Figure 4. BCTP Training Life Cycle

SEMINAR PLANNING

BCTP schedules both a Site Survey and Initial Planning Conference (3) (4) to identify the general planning and coordination requirements for the seminar and the Warfighter Exercise. Attempts are made to conduct the two meetings concurrently but it is not a requirement. Army and contractor personnel conduct the Site Survey and IPC at the unit location to accomplish, at a minimum, the following tasks:

IPC Requirements:

- Brief the BCTP Program Overview and Unit Requirements.
- Identify Warfighter location and facilities.
- Identify the unit METL and seminar training objectives, theater of operations and scenario.
- Develop initial draft of augmentee requirements.

Site Survey Requirements:

- Identify Battle Simulation Center (BSC) requirements.
- Determine Power Requirements.
- Determine long and short haul communications line requirements.
- Identify available billeting facilities.

Following the IPC and Site Survey, Operations Group personnel begin developing the tactical scenario (5) to be used during the seminar. Staff coordination and communication between BCTP and the unit (6) continue to refine concepts and resolve issues as they develop. WCOPFOR exercise and operations personnel also establish a working group and begin formulating an OPFOR action plan (7). Using the information obtained from the Site Survey, Initial Planning Conference, and other informal coordination activities, BCTP conducts an internal Exercise Laydown Seminar (10). It is during this seminar that BCTP formulates a plan for the development of a Logistics Support Plan (11) for the

seminar, and initiates coordination for facilities, billeting, local transportation, and materials needed to support the seminar training.

During the first In Progress Review (IPR) (12), the BCTP Commander reviews his guidance with the Operations Group Commander and planning team and expresses his intent. Issues are surfaced and categorized for actions and resolutions. Operations Group personnel review and deconflict schedules to ensure the availability of sufficient resources to conduct the training. The BCTP Commander personally approves the concept for the seminar, the scenario, training tools, methods, and training team. Coordination for Senior Observer participation also occurs at this time.

The Operations Group (Figure 5) prepares the corps order and other requirements that support final seminar scenario development (13). Additionally, the civilian contractor (RDA) seminar team develops and tests the databases needed to perform the simulation (14). Continuing preparations for the seminar include finalizing the seminar plan (15), arranging the classroom, and rehearsing presentations (16). BCTP briefs the CAC Commander (16A) on seminar preparations and milestones and schedules his participation, if desired. A "go" decision obtained from the BCTP Commander locks in plans and preparations for the conduct of the seminar (17).

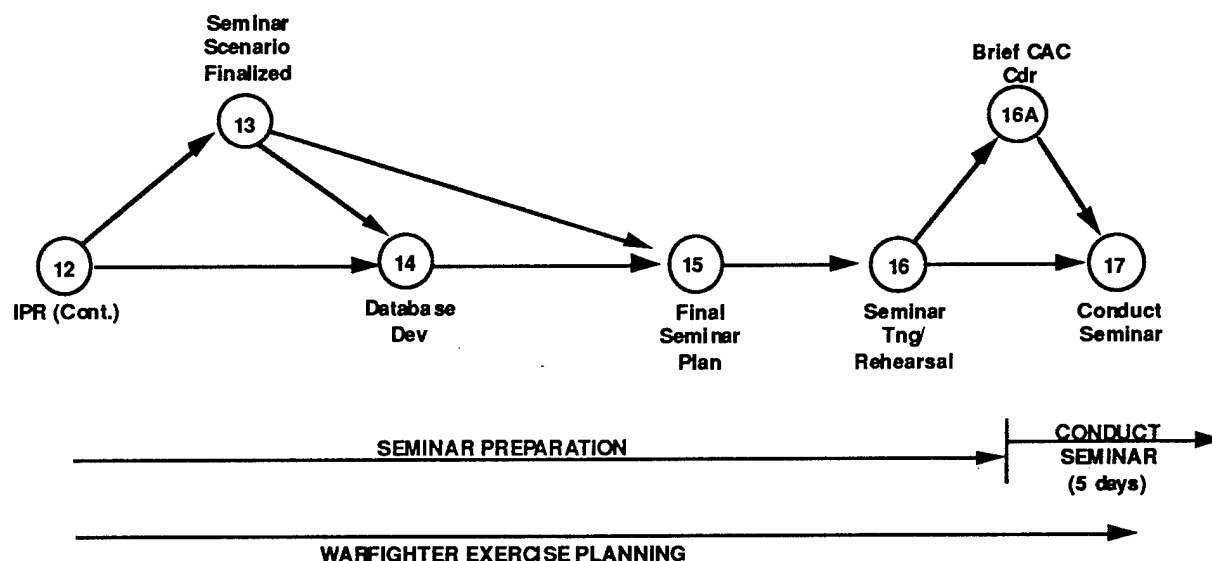


Figure 5. BCTP Training Life Cycle (Continued)

WARFIGHTER EXERCISE PLANNING

Following the seminar (17), planning continues for conduct of the Warfighter Exercise (Figure 6). After the seminar and approximately 4-6 months prior to the beginning of the Warfighter Exercise, BCTP and the Warfighter unit's higher headquarters conduct a STARTEX conference (19). It is during this conference that BCTP discusses and coordinates the following elements:

- Warfighter training objectives.
- Scenario and theater of operations.
- Intelligence exchange.
- Blue organization.

- Red order of battle (approved by CAC-threats).
- Intelligence collection assets.
- Force modernization changes.
- Road to war and STARTEX locations.
- Status of USAF and WCOPFOR air assets.

Both the BCTP Commander and the training unit's higher headquarters approve the results of the STARTEX conference. The STARTEX conference begins a constant dialogue on key events between BCTP, the player unit, and the higher headquarters that continues through the Warfighter Exercise. Key events consist of training dates, delivery dates for decisions, databases, products required for exercise preparation, and future IPR schedules. It is during this meeting that the higher commander conveys his intent to his staff and the unit commander who will be participating in the rotation. This is a team-building activity that establishes the working relationships needed to produce quality training.

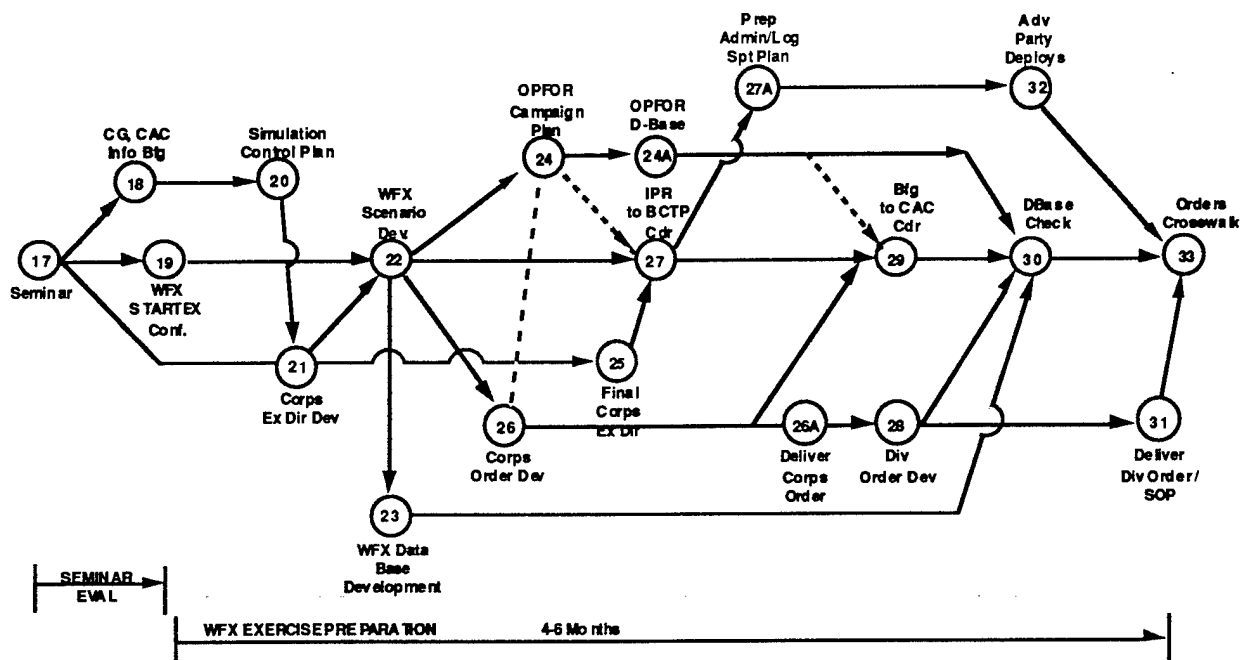


Figure 6. BCTP Training Life Cycle (Continued)

During the STARTEX conference, BCTP commits itself to delivery schedules and support activities for the training and identification of the WCOPFOR structure and leadership. BCTP refines unit augmentation requirements from the Initial Planning Conference to allow the higher headquarters to initiate the development of its Exercise Directive (21). The Exercise Directive is developed to describe the parameters of the Warfighter Exercise to the higher headquarters and player unit participants and staff. It also serves to define responsibilities for the conduct and evaluation of training. The Exercise Directive includes an exercise control plan that supports remote or distributed gaming, administrative instructions, and prescribes milestones for support and submission of access rosters. BCTP assigns personnel to specific duty positions and identifies augmentee observers who will participate in the exercise. The higher headquarters identifies the size and composition of its participating elements. Information gathered from the STARTEX conference and the draft Exercise Directive supports the development of the exercise scenario (22). Scenario alternatives are wargamed by the Operations Group to identify the one best suited

to support the training objectives of the unit. Coordination continues with the higher headquarters staff for the preparation of the order (26) and operational summaries (OPSUMs).

A key element of the Exercise Directive is the Simulation Control Plan (20). This plan describes the organization and functions required to control the training event. BCTP coordinates the plan with the BSC and staffs of the higher headquarters. It is at this time that BCTP begins to match faces to spaces to perform the control and observation functions.

Concurrently, the Operations Group planners work with the BSC and higher headquarters staffs to build a BLUE database that conforms to the parameters/constraints established by the corps, division, and brigade orders (23). The WCOPFOR develops databases that conform to the parameters/constraints established by the WCOPFOR campaign plan (24). CAC threats participate in WCOPFOR validation and certifies that campaign and databases are consistent with doctrinal norms and conventional knowledge of the threat force being played.

Two to three weeks prior to STARTEX of the Warfighter Exercise, the higher headquarters staff, supported by BCTP planners, prepares and issues an Operations Order (OPORD) to the training unit (26-28). The BCTP exercise planning team reviews this order for consistency with the master events matrix. Using the task organization of the higher headquarters order, the BCTP planning team decides which forces to input into the simulation database or play off-line.

The next step is an IPR Briefing (27) to the BCTP Commander by the director of the responsible BLUEFOR Operations Group and the WCOPFOR. The briefing results in approval of the exercise scenario and the WCOPFOR campaign by the BCTP Commander. The IPR also identifies any emerging issues or problem areas that could impact on training. Another critical result of the IPR is the BCTP admin/log support plan (27A). BCTP personnel develop a roster of participants and augmentees, establish an augmentee training plan, confirm billeting and transportation arrangements for BCTP sponsored personnel, submit invited observer access rosters, and prepare TDY orders.

Prior to deployment from Ft. Leavenworth, the training unit submits copies of its order, overlays and Tactical SOP to the BCTP Operations Group (31). While at both Ft. Leavenworth and the Warfighter training site, BCTP Operations Group team members conduct a detailed crosswalk (33) of the various documents to identify gaps or inconsistencies with the stated higher commander's intent, between orders, or with doctrine. The BCTP Commander and Senior Observer receive a written evaluation of this process for their information and use during observation of Warfighter activities and AARs.

The Warfighter Exercise begins in earnest with the deployment of the advance party to establish the BCTP Operations Center, administrative sites, and communications network (32). This element supervises the configuration of the BSC to support the training event, issues audiovisual and other items needed to support the training team, establishes the AAR facility, and accepts the arrival of the main body. Upon his arrival at the training site, the BCTP Commander receives a status report briefing.

With the arrival of the main body (34) (Figure 7), OCs conduct a reconnaissance of their designated field sites and establish contact with their unit counterparts. The Senior Observer, BCTP Commander, and unit commander receive orders briefings by unit staffs approximately two days prior to STARTEX. During this time, the unit also completes its deployment to field sites, conducts small-group augmentee training, practices simulation center workarounds, and modifies the database as required (35). Prior to STARTEX, all player and BSC personnel participate in a Communications Exercise (COMEX). It is through this COMEX that the unit establishes its communications nets and confirms its operation. Workstation personnel initialize the databases using the task organization provided in the Operations

Order. Under the supervision of the Operations Center, the system is run up to STARTEX time and placed into an "idle" mode. Once BCTP provides the Senior Observer with information and initial findings and confirms the functionality of its communications network, the exercise is ready to begin (36). The Warfighter Exercise officially ends approximately 5 days later at an ENDEX time agreed on by BCTP and the Exercise Director (37). After the final AAR is delivered (38), BCTP personnel re-deploy to Ft. Leavenworth and begin preparing the Final Exercise Report (FER) and the Proficiency Sustainment Package (PSP) (39) for delivery to the unit (40).

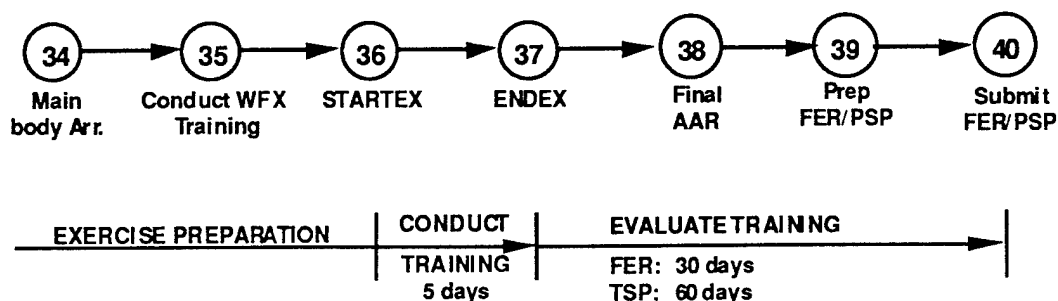


Figure 7. BCTP Training Life Cycle (Continued)

Using the general overview of BCTP operations provided in this section, sections III and IV examine the seminar and Warfighter phases in greater detail. Each phase is mutually supportive of the other and contributes to the synergy of the training experience of multiple echelons and proponents.

III. THE BATTLE COMMAND SEMINAR

The first phase of a BCTP rotation for each unit is the Battle Command Seminar. With some exceptions, BCTP conducts the seminar at Fort Leavenworth for a period of one week. Ideally, the seminar occurs within the first six months of the division commander's assignment. The key participants normally attending a division level seminar are shown in Figure 8. The key players include the division commander, the division primary staff, and brigade and separate battalion commanders. Staff support includes selected members of the plan's element, assistants from the separate battalions, key NCOs, and clerk/typists. Criteria for selecting participants for a corps seminar are fundamentally the same, only an echelon higher.

The most valuable result of the seminar is team building between the commander, his major subordinate commanders, and principle and coordinating staff members. The seminar offers an excellent opportunity for the commanders and staff to remove themselves from the everyday distractions of the home station training and working environment and participate in a free and professional exchange of ideas and tactical problem solving. It provides each participant greater insight into the commander's mode of operation, leadership style, expectations, and performance standards. It also provides the commander with a unique opportunity to exchange dialogue with his subordinate commanders and staff and determine strengths and weaknesses.

Planning for a BCTP seminar begins upon assigning responsibility to a BCTP Operations Group for planning, coordination, and execution responsibility for a particular unit. Within the Operations Group, a smaller team is task organized to be the point of contact and coordinating element for the training unit. They are responsible for accomplishment of all seminar milestones, to include coordination

with the training unit, preparation of all necessary seminar materials, and execution of the seminar. An example of a notional seminar planning milestones is as follows:

- (-) 90 days: Read Ahead Package to Unit
(-) 180 for Reserve Component units
- (-) 60 days: Initial Seminar Schedule
- (-) 45 days: Corps or higher Order
- (-) 14 days: Final Seminar Schedule

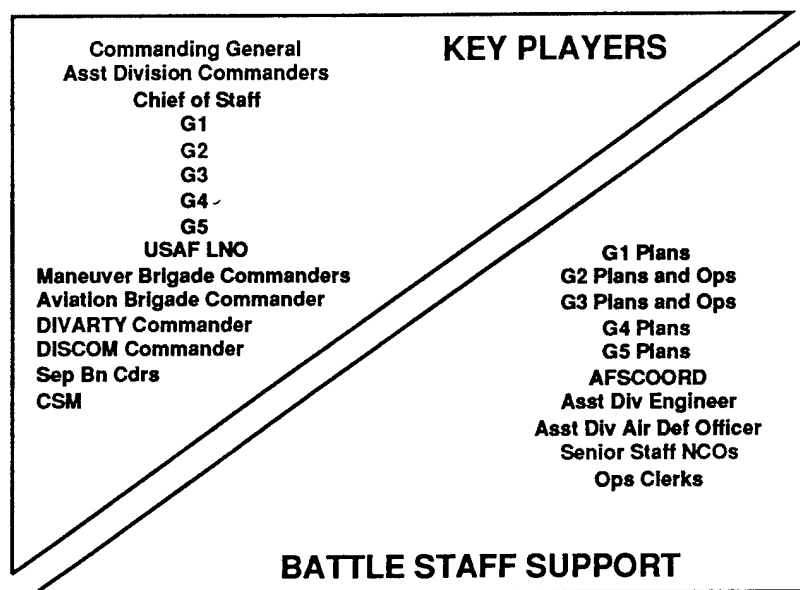
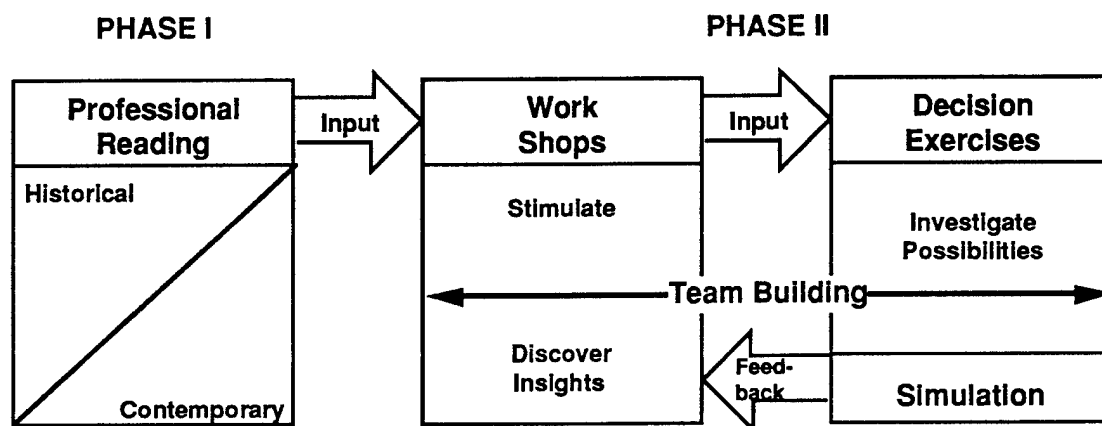


Figure 8. Division Level Seminar Participants

Coordination activity begins almost immediately after notification to an Operations Group assigning exercise responsibility. These coordination meetings ensure the training unit understands the program and participant training requirements. Frequently, the development of the scenario and databases (both red and blue) become issues. Close coordination between the unit and BCTP Operations Group personnel ensures that the resolution of these issues has minimum impact on seminar preparation time and goals. The *Instructional Guide to Battle Command Seminars* and the *Decision Exercise Procedures Manual* are both used by BCTP to structure the seminar activities and schedule. Both documents call for use of the TRADOC Common Teaching Scenario, TRADOC Analysis Command (TRAC) validated tactical operations, and a training WCOPFOR database. For a variety of reasons (e.g., unit training needs, contingency plans, type unit) BCTP develops other scenarios and databases.

During pre-seminar coordination activities, the unit identifies METL training objectives, both staff and tactical, it wants to accomplish during the seminar. The higher unit and BCTP designate a "playbox" (area of operations) to support the simulation and tactical analysis of the seminar. BCTP purposely keeps the seminar "playbox" and Warfighter "playbox" different to maximize unit staff analysis and planning procedures.

The seminar consists of two phases (Figure 9). Phase 1 is the professional reading phase accomplished by seminar participants at home station. The professional readings provide historical and contemporary writings for the unit's professional development and establish a common knowledge base for the conduct of professional discussions during the seminar.



Phase II is a five day training program comprised of a series of workshops and decision exercises designed to facilitate discussion and test the application of doctrine, tactics, techniques, and procedures. This phase involves the actual deployment of the seminar participants to Ft. Leavenworth. Pre-seminar activities begin with the deployment of the unit battle staff and support personnel to arrive and check-in on the Friday preceding the actual beginning of the seminar. On Saturday, BCTP Operations Group personnel present a formal program of briefings to the battle staff to assist them in the development of supporting products required for conduct of the seminar, followed by set-up of staff work cells. These briefings normally include the following subject areas:

- Introduction
- BCTP perceptions
- Workshop on the decision process
- Brief on the higher headquarters plan
- WCOPFOR order of battle and basic doctrine brief

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remainder of the seminar personnel normally arrive Sunday for check-in and begin the seminar on Monday morning.

The actual seminar begins on a Monday and runs through Friday. BCTP tailors each seminar to the training requirements expressed by the unit commander during initial coordination activities. Figure 10 depicts a typical schedule of daily seminar activities. These activities represent an agenda capable of being adjusted and tailored to support the needs of each unit. Not represented, but critical to the effectiveness of the seminar, is the collateral and supportive activities of the unit battle staff and BCTP staff to responsively develop products that support the commander's decisions.

Pre - Seminar Activities			Seminar
Friday	Saturday	Sunday	Monday
<ul style="list-style-type: none"> Battle Staff & support personnel arrival and check-in 	<ul style="list-style-type: none"> Introduction by BCTP BCTP perceptions Decision process workshop Higher HQ plan brief OPFOR OB & basic doctrine brief Set-up staff cells 	<ul style="list-style-type: none"> Mission analysis conducted by battle staff Main body arrival and check-in 	<ul style="list-style-type: none"> BCTP overview brief Workshop: decisionmaking Higher HQ OPLAN brief Receive mission analysis briefing from staff Cdr prepares and issues guidance and Intent, COA dev. Workshop: Threat Receive COA Dev. Brief and issue COA guidance COA analysis/ comparison
Seminar			
Tuesday	Wednesday	Thursday	Friday
<ul style="list-style-type: none"> Cont Cdr's est Receive Decision Brief Workshop: Perceptions Briefing Workshop: Sustainment Receive OPLAN Briefing approval MSC Cdr's COA, prepare backbrief 	<ul style="list-style-type: none"> MSC backbriefs Conplan mission analysis brief Issue Cdr's conplan guidance/Intent Workshop: Leadership Conplan COA brief Issue conplan COA guidance 	<ul style="list-style-type: none"> Current operations update Conplan decision brief Threat Cdr's brief Conplan brief/ approval 	<ul style="list-style-type: none"> Current opns slt rep MSC conplan backbriefs Workshop: SOF Workshop: Pre-WFX Activities Internal unit hotwash Cdr overbrief with CAC Cdr

Figure 10. BCTP Seminar Daily Activities

The seminar begins with an overview briefing by the BCTP Commander, followed by a decision making workshop. The BCTP staff, playing the roles of the higher commander and selected staff elements, briefs the plan of the higher headquarters to the training unit. The structure of the seminar provides the unit with opportunities to ask questions and clarify mission intent. Following the higher unit's briefing, the seminar unit then begins a methodical process of implementing the doctrinal steps of the decision making process culminating with the development of a unit plan. BCTP presents several workshops, both routine and unit requested, to the seminar participants. One of the most popular workshops is the BCTP Perceptions briefing, covering performance derived from previous BCTP rotations. This briefing, organized by BOS, is one of the few opportunities the unit has to receive updated lessons learned available from BCTP data. Within each BOS, the commander covers a set of perceptions.

The May 1992 briefing slides included 66 perceptions. The BCTP Commander uses this portion of the seminar to emphasize and discuss selected perceptions to assist when the unit develops its plan for the Warfighter Exercise.

During the seminar, the OCs, especially the Senior Observer, act as mentors to their counterparts on the staff. Much of the feedback from the OCs during the seminar occurs informally, through their work and discussions with the staffs and commanders. The Senior Observer normally works with the division or corps commander and other general officers and provides mentorship throughout the seminar or, if it is really serious, through one-on-one discussions during a quiet "walk in the woods."

BCTP recently redesigned the seminar structure to allow units to obtain exposure to and experience with the process of parallel planning. Previous Warfighter Exercises have demonstrated the need to be able to plan, coordinate, and synchronize a future operation while simultaneously accomplishing the mission of the current battle. Figure 11 represents the BCTP seminar technique for introducing the unit to the parallel planning process. While the unit is finalizing the current operations plan, the higher headquarters (BCTP) provides a warning order late on Monday or on Tuesday to alert the unit to their subsequent mission. Through this process, the commander and his staff must manage the requirements of the current battle and visualize its outcome while developing a concept and course of action for the future operation. The objective is to synchronize the future plan to enable the unit to initiate the next mission from the vicinity of where the current mission ends. The result is a smooth transition from one mission to another and elimination of the confusion and movement normally associated with beginning a new mission.

MON	TUE	WED	THU	FRI
Current Opns Planning				
<ul style="list-style-type: none"> • Cdr's est. guidance/ intent • COA dev. 	<ul style="list-style-type: none"> • Current ops plan brief / approval 	<ul style="list-style-type: none"> • Run simulation on current ops 	<ul style="list-style-type: none"> • Current ops sitrep • Cdr's guidance • Run simulation 	<ul style="list-style-type: none"> • Current ops sitrep
Future Opns Planning				
<ul style="list-style-type: none"> • Receive warning order future opn 	<ul style="list-style-type: none"> • Rec conplan • Begin mission analysis 	<ul style="list-style-type: none"> • Mission analysis brief • Issue Cdr guidance / intent • Conplan COA brief 	<ul style="list-style-type: none"> • Decision brief • Conplan brief/ approval 	<ul style="list-style-type: none"> • MSC backbriefs

Figure 11. BCTP Seminar Parallel Planning Process

IV. WARFIGHTER EXERCISE

The BCTP schedules and conducts the Warfighter Exercise within a 3-6 month window after the seminar. It synchronizes seminar and Warfighter windows to support its long-range planning calendar. DA DCSOPS is then responsible for identifying which units are "plugged" into each time window. Active Component (AC) units usually conduct the exercise at their home station while Reserve Component (RC) units conduct the exercise in facilities provided by Ft. Leavenworth and the 35th Mechanized Infantry Division of the Kansas National Guard.

The Warfighter Exercise provides the training participants with a surrogate battlefield experience like that provided at the NTC to battalions and brigades. The goals of the BCTP Warfighter Exercises are to:

- Create realistic training conditions
- Provide objective performance measurement methodology
- Collect, collate, and analyze data
- Provide a responsive feedback system

There are two types of Warfighter Exercises conducted by BCTP, standard and non-standard. This section describes the standard Warfighter in detail. Non-standard Warfighter Exercises require extraordinary circumstances and CSA approval. There are three categories of non-standard Warfighters:

- **Enhanced:** A Warfighter that includes limited OC and AAR efforts for another unit or echelon.
- **Embedded:** A corps Warfighter that includes a division Warfighter.
- **Linked:** A Warfighter conducted in conjunction with another major exercise. Scenarios and training objectives are usually the same (Reforger).

BCTP strives to replicate and produce the stress and confusion of battlefield conditions. It employs a methodology analogous to the NTC OC team to capture performance measurements based on the unit Army Mission Training Plan (AMTP). The OC element, certified and trained at CAC, thoroughly understand the training unit's battle staff team and its operating procedures as a result of the seminar and pre-Warfighter coordination.

The rotation unit staff and support elements deploy to the field and set up doctrinally required command posts (CPs) in a combat configuration. BCTP contractor personnel, an Operations Group, one or more Senior Observers, and supporting personnel and equipment deploy to the Warfighter Exercise location. The same mobile training team that supported the seminar conducts and supports the Warfighter. Individual OCs continue the mentor relationship they developed during the seminar.

As shown in Figure 12, a normal Warfighter Exercise is 5 days in length and runs continuously for 24 hours each day. Each unit conducts those doctrinal attack and defend missions that best support previously selected Mission Essential Task List (METL) objectives for the exercise. As with the seminar, the unit conducts parallel planning during the exercise by planning a subsequent mission as it is conducting the current mission.

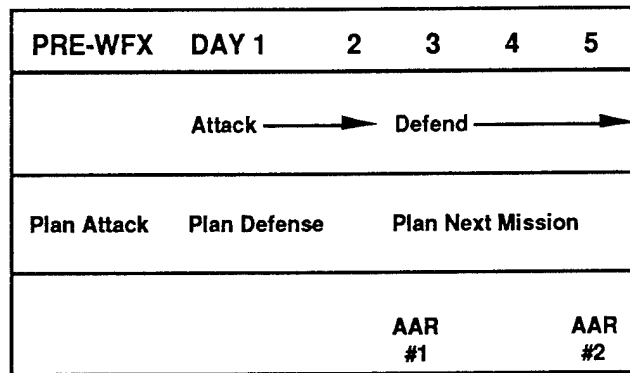


Figure 12. Sample Warfighter Schedule

The conduct of a Warfighter Exercise is a complex task of multiple, overlapping functions performed by both military personnel and civilian contractors. The Warfighter data flows are coincident with a number of processes that interact to produce the training conditions and generate the data needed to measure performance. The Warfighter Exercise organization uses three information flows: AAR data flow, guidance flow, and coordination. The remainder of this section will identify and examine the various organizations, functions, and processes involved in successfully conducting a Warfighter Exercise.

Warfighter Organization

Each Warfighter begins with a proven and effective chain of command structure that places critical functions and responsibilities on the right personnel. The key elements of this chain are the Exercise Director, Deputy Exercise Director, the Warfighter Unit Commander, and the Senior Observer (Figure 13).

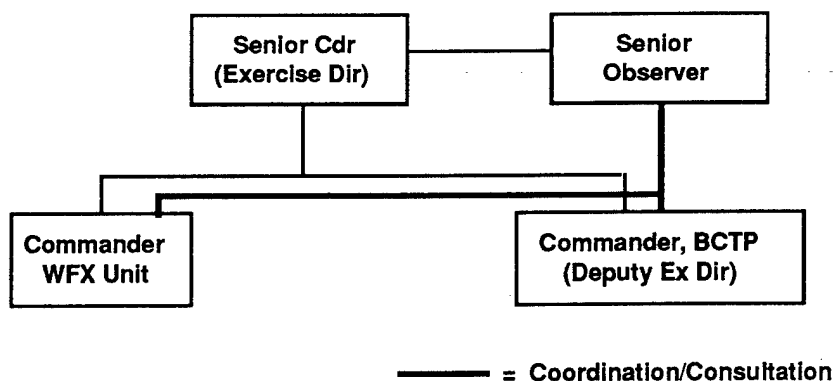


Figure 13. Warfighter Chain of Command

The senior commander of the next higher headquarters fulfills the function and role of **Exercise Director**. As the higher commander, the Exercise Director approves the unit's training objectives and the scenario used to accomplish those objectives. He is the primary trainer during the Warfighter Exercise and enforces the CTC training methodology. He exercises control over the operations of all blue and red forces; receives red, blue, and white cell briefings; and issues guidance for future operations. The

Exercise Director fulfills a command and control function over the **Commander** of the training unit. It is the commander's responsibility to develop his unit's training objectives and fight his unit during the Warfighter Exercise.

The **Deputy Exercise Director** is the BCTP Commander. It is his function and role to plan and deliver the exercise to the training unit and provide trained and certified observer/evaluators (OCs) to support training evaluation. He ensures compliance with the CTC methodology through the activities of the Battle Simulation Center. The Deputy Exercise Director ensures the accomplishment of unit training objectives through the implementation of the Exercise Director's guidance. He is responsible for the planning and conduct of each formal AAR delivered during the Warfighter Exercise. In his role as the Deputy Exercise Director, the commander of BCTP reserves the authority to make changes to the simulation to maintain integrity and competitiveness.

Actively supporting and advising throughout the Warfighter Exercise is the **Senior Observer**. The Senior Observer is a retired three or four star general officer known and respected throughout the Army for his proven combat leadership abilities and large unit tactical experience. His role is unique to CTC training activities in that he roams throughout the exercise activities and facilities and provides mentoring and constructive feedback to the Exercise Director, the Deputy Exercise Director, and the training unit commanders and staffs.

BCTP Warfighter Operations

Internal to the BCTP organization, the BCTP Commander performs his functions through the Warfighter Operations. The functional alignment of responsibilities within the Warfighter Operations, as shown in Figure 14, becomes effective at STARTEX minus 72 hours. The term Warfighter Operations is used to encompass all operations conducted within the Battle Simulation Center established at the training site. Warfighter Operations and the Battle Simulation Center are common terms used during each Warfighter training event.

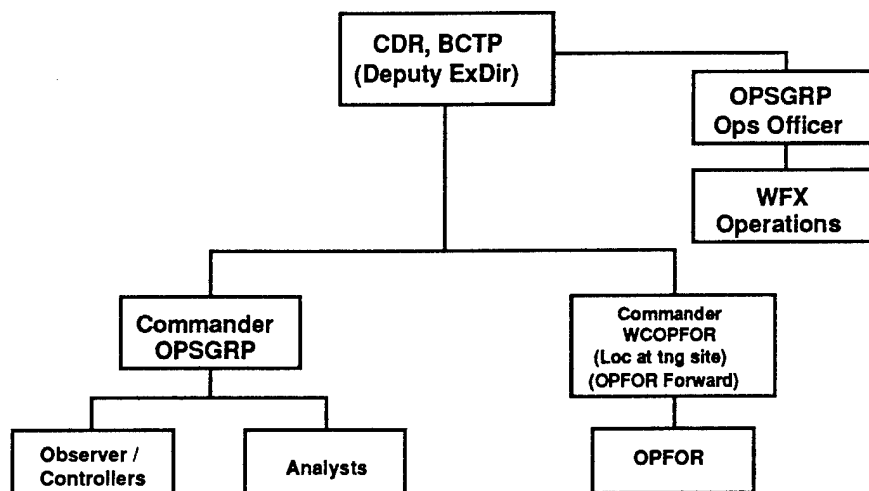


Figure 14. BCTP Warfighter Command and Control

Warfighter Operations monitors and integrates key exercise processes and nodes. Warfighter Operations (Figure 15) is the focus for the OC team, white cell, senior control, WCOPFOR, intelligence

scripting cells, Corps/EAD, analysis, and AAR production. Operations is the synchronizer for the exercise. It is multi-faceted and flexible to respond to new requirements for information and to absorb new technologies as they become available. It has subordinate elements that control the simulation, collate and analyze data, maintain internal communications networks and landlines to remote sites, and prepare the AAR materials for the Chief OC and Exercise Director.

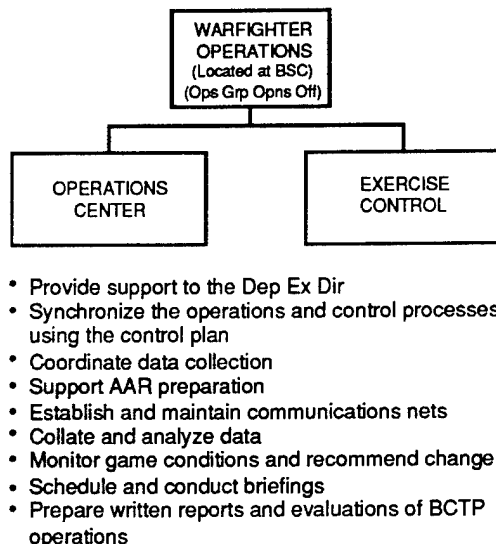


Figure 15. Warfighter Operations Organization and Functions

The Operations Officer of the BCTP Operations Group is responsible for the Warfighter Operations Center, the workstations, and the exercise control (EXCON) cell. Beginning at Warfighter STARTEX minus 24 hours, he is responsible to the BCTP Commander for tracking all exercise preparation activities; supervising administration, communications, audiovisual support, and exercise control activities; setting up the AAR site; and coordinating with the WCOPFOR (Fwd).

BCTP Warfighter Operations comprises a highly trained, multi-disciplined team who assess game outcomes to determine their training significance. They correlate available sources of information and determine why events occurred, compare outcomes to approved standards (imposing military judgment and experience when necessary), formulate proposed AAR products and present them to the Exercise Director or Chief OC for consideration. Key to the success of Warfighter Operations is an intimate understanding of the operational scheme employed by the WCOPFOR and expected BLUE responses, familiarity with the CBS and the off-line supporting cells, and a high-performing team throughout the exercise. Warfighter Operations must be able to think quickly and anticipate where the flow of battle is taking the players to be able to initiate action to deviate from the planned agenda when it is essential for the purpose of training.

Operations functions support three phases of the BCTP Warfighter Exercise:

- Pre-Exercise Phase
- Exercise Phase
- Post Exercise Phase

Pre-Exercise Phase. Prior to the training period, Warfighter Operations personnel must remain cognizant of the proposed evaluation plan for the training. This will ensure that the equipment and personnel needed to develop the AAR products are on site at STARTEX. During this phase, the Operations Sergeant is critical to ensuring that all pieces are functioning and synchronized with the principal components of the training at STARTEX.

The Operations Center cell of Warfighter Operations deploys and immediately begins performing its role as the nucleus of all Warfighter activities. The Operations Center ensures that all personnel have easy access to information ports throughout the facility. Set-up includes communications checks, preparation of battle maps, and participation in any pre-exercise training that is taking place.

Exercise Phase. During the exercise, Operations continuously gathers data needed to synchronize training and assess performance. Warfighter Operations monitors and traces player performance in areas related to specific training objectives. Throughout the exercise, Warfighter Operations serves as the central collection point and repository for data generated during the training. BCTP documents, catalogues, and retains this information for future use in preparing the Final Exercise Report (FER), revising BCTP training methods, or supporting the development of a BCTP database.

Throughout the period between formal AARs, BCTP analysts rationalize the known results against accepted norms and assess them for training significance. AAR production requirements for the Operations Center are:

(1) Data Collection and Integration. Warfighter Operations continuously receives data in multiple forms throughout the exercise. The evaluation plan describes training objectives and the indicators or performance measures needed to assess the observed activity. For advanced collective tasks involving several functions or activities, observations provide an understanding of the underlying processes that created the final outcomes through manual and computer correlation. Over time, patterns or pictures begin to emerge. The analyst section produces these products in graphic form and submits them for approval.

(2) Assessment. During the assessment process, a group of BCTP Operations personnel study proposed AAR products and evaluate how they portray the training effectiveness of the unit. Each product must be relevant and meaningful to the training audience. Analysts fully document and substantiate each finding based on objective evidence or competent authority in the area being examined. Failure to achieve these criteria invalidates a potential issue.

(3) Preparation. The analyst section converts approved draft AAR products to their final presentation form. An abstract accompanies each chart, graph, or vignette to aid the senior OC in presenting it during the AAR. In those instances requiring audiovisual products, BCTP personnel review the tapes and set them up for immediate viewing. The Senior OC prepares an introduction prior to the AAR to set the stage for the intent of the tape.

Post-Exercise Phase. Operations personnel are the last BCTP elements to depart the exercise site at the conclusion of training. The Center receives final reports and collects all accountable property and prepares it for re-deployment to home station, or forwards it to the next exercise site. Operations personnel return all classified and unclassified exercise-specific documentation to Ft. Leavenworth for processing and delivery to interested agencies with a need for access to those materials.

OPERATIONS CENTER

The Operations Center operates with two twelve hour shifts to support the continuous 24 hour play of the exercise. Key personnel augment the primary to prepare AARs, while the secondary shift provides coverage and continuity where there is normally no AAR planned. In concept the Operations Center parallels the training feedback and analysis functions at the other CTCs, especially the NTC. The Operations Center is responsible for administration, current operations, senior control, technical control, player workstations, and OC support throughout the conduct of the exercise (Figure 16). The Operations Shift OIC is the primary assistant to the Operations Officer and performs the duties of the Operations Officer in his absence.

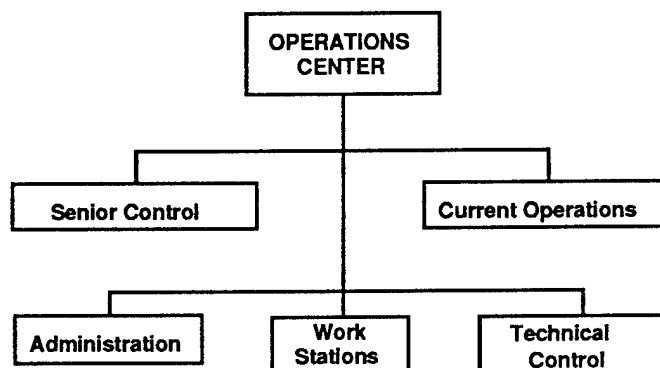


Figure 16. Operations Center Elements

Senior Control. The senior control element searches for, detects, and eliminates gaming and ensures that both blue and red forces stay within the bounds of the designated playbox. The Operations Center fulfills the function of senior control by maintaining a master workstation that is capable of injecting "magic" commands into the CBS simulation to adjust unit strength and supply levels. Senior control operators interact with the CBS workstation controllers. Senior control coordinates and documents all actions before initiation.

Current Operations. This element manages the Operations Center augmentees and communications. It maintains an accurate, current situation map to provide the BCTP Commander and other Operations Center personnel with current and detailed information on the battle. This element maintains communications with the OC elements in the field and cues OCs, Senior Observer, and the BCTP Commander to significant developments before they occur. The current operations element conducts all Warfighter situation update briefings and collects information needed to respond to unanticipated or unforecast issues that support AAR development. Additionally, they are responsible for setting up the formal AAR facilities and taping the AAR process.

Current Operations also maintains the big picture of the tactical operations to describe what is going on and assesses whether current events are in line with the planned scenario. The Senior Controller and scripting cells contribute to adjustments to the big picture. The Operations Center depicts the major events that are being tracked and the order in which they are expected to occur. It provides a means of managing the collection and analysis efforts to support development of the AAR.

Current Operations establishes a specific workstation to support the development of the battle summary. The battle summary, sometimes referred to as the "seven minute war," is an AAR technique

used during formal AARs to highlight significant blue and red tactical events occurring prior to AAR information cutoff. This workstation contains a rapid slide making capability to document the war in time steps. Supported by graphics slides, selected officers narrate the battle summary to the AAR audience near the beginning of the AAR. Its purpose is to establish game truth and help clarify the tactical situation for all participants. Using data obtained directly from CBS and confirmed through coordination with OCs, battle summary personnel script the presentation into a short, concise, verbal and pictorial summary of tactical operations.

Administration. The administration element prepares both formal and counterpart AAR products not prepared by the analysts. It prepares documents for OCs and handles real world administrative actions not related to the Warfighter that come in from BCTP headquarters for the BCTP Commander and other BCTP personnel.

Technical Control. This element sets up and maintains the hardware required at the simulation center and continuously monitors the simulation to ensure proper functioning and Warfighter support. Technical control has the capability to "debug" software problems and is able to retrieve data from historical files to support AARs. Technical control is responsible for developing an exercise support plan, to include developing and testing the database. They also participate in the set up of the simulation center during Warfighter Exercises and provide computer maintenance support both during the exercise and the surge period prior to STARTEX.

Workstations. Workstations consist of both contractor and unit personnel assigned to a cell to perform sub-unit functions. The player unit supports workstation cells at the simulation center with personnel and organic equipment. These cells (Figure 17) take orders and guidance from their higher headquarters over tactical communications systems, convert them into execution statements and input them into the computer. They also role-play subordinate units and report to their higher headquarters using the unit's internal SOP and tactical communications. BCTP provides a complement of well trained and experienced civilian contractor personnel to monitor and assist at this level of the exercise.

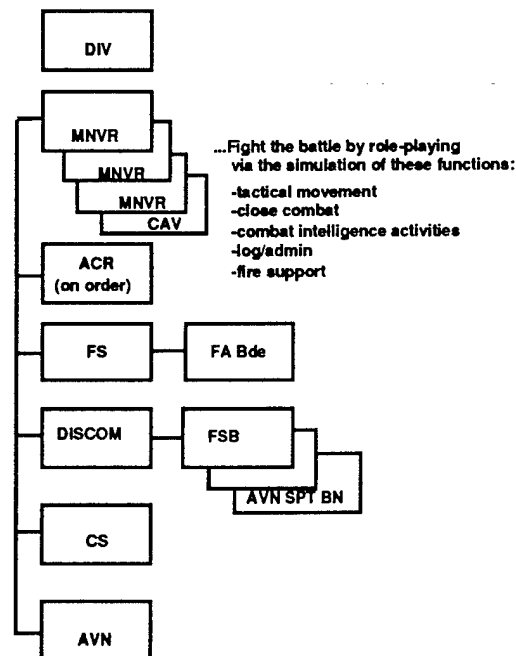


Figure 17. Division Warfighter Workstation Player Cell Organization and Functions

Contractor personnel teach the unit workstation players the technical operation of the simulation, role-playing, and BCTP rules and workarounds. They organize and supervise the operation of the workstations prior to STARTEX to include positioning units in their initial locations. Throughout the exercise, contractor personnel ensure workstation players make the simulation invisible to the units in the field and prevent the players from acquiring unfair advantage through the use of gamesmanship techniques. They observe, record, and report events within their workstation to support AAR preparation and cue OCs and analysts to potential significant events.

EXERCISE CONTROL

Exercise Control (EXCON) ensures the development and fairly administered competitive training environment for each Warfighter. It is EXCON that defines the "non-competitive" environment, i.e., higher, flank, rear, and deep units, within which the unit fights the "competitive" battle. It is responsible for providing realistic intelligence collection and reporting for both blue and red forces that emulate actual system capabilities at the same level of classification as the Warfighter. It executes approved BCTP workarounds, scripting and role-playing activities as required to enhance the simulation and its transparency to player units. EXCON is responsible for scheduling and conducting the daily BCTP executive update meetings to provide critical information to the Exercise Director and receive new directives and guidance.

BCTP organizes and structures EXCON (Figure 18) to support a wide spectrum of player unit (blue and red) actions. The BCTP Exercise Control Chief supervises EXCON operations. He is responsible overall for the organization, training, and operation of the exercise control planning, coordination, and execution effort.

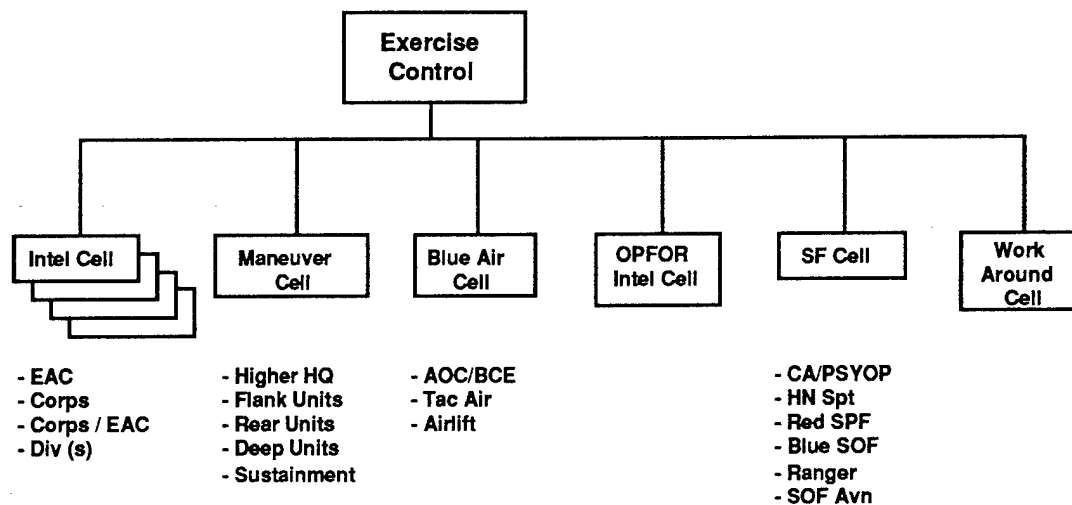


Figure 18. Exercise Control (EXCON) Organization

EXCON Intelligence Cell. The quality and quantity of intelligence scripting (Figure 19) is critical to the effectiveness of a BCTP Warfighter Exercise and contributes significantly to the perceived effectiveness of the training to the unit. Each Warfighter Exercise requires a scripting cell because the computer model cannot produce raw data for the MI Bn Technical Control and Analysis Element (TCAE) to interpret and process. Because the model only produces a ground truth representation, some

intelligence must be developed by scriptors. The intelligence cell provides the collateral intelligence products used by the DTOC Support Element (DTCSE) in support of the planning and decision cycle. The scripted reports (3000 to 5000 per exercise) replicate, as close as possible, the quantity and quality of information that would be available from actual, real-world intelligence collection platforms. The DTCSE receives these reports from the scripting cell as processed intelligence.

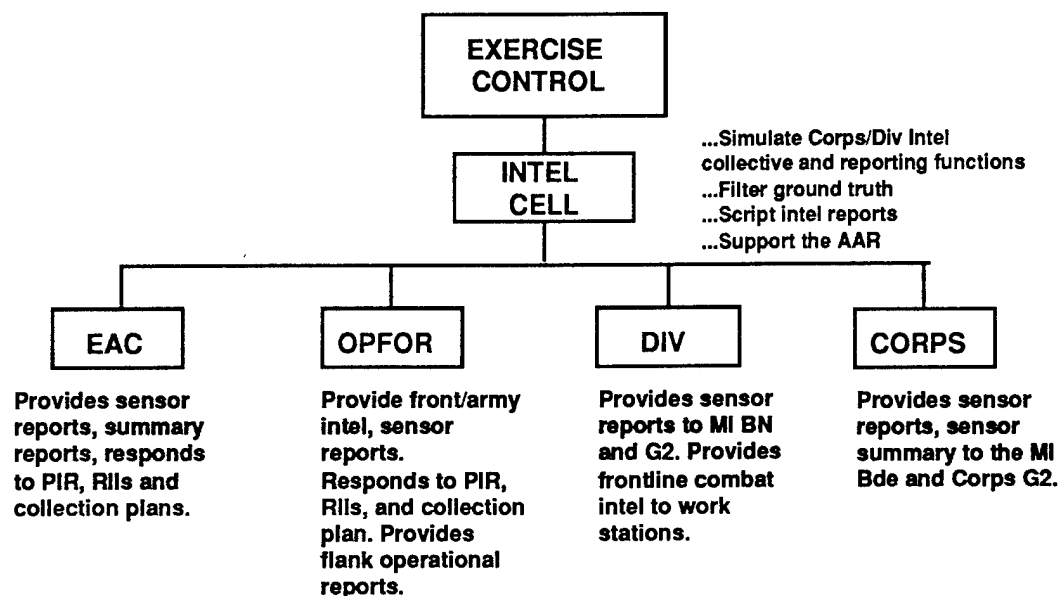


Figure 19. Intelligence Scripting Cell Organization and Functions

Figure 20 depicts the BCTP intelligence reporting system. BCTP simulates the intelligence process using role-players and controllers that use the CBS model to create report flows. The higher headquarters specifies a mission in its order and provides Operational Summaries (OPSUMs) and Intelligence Summaries (INTSUMs) that create a context for the operation. The higher headquarters develops its inputs from the pre-exercise scenario and guidance provided by the White Cell. Player units assimilate the higher headquarters guidance and direction and integrate these inputs with its current IPB. The emergent synthesis produces priority information requirements (PIR) for analysis by the intelligence operating system within the DTCSE. Unit requests for intelligence information flow to the scripting cell over tactical communications.

Intelligence specialists from the Corps MI Brigade and the Division CEWI Battalion comprise the scripting cell. BCTP personnel supervise the activities of these augmentees. The cell processes requests and determines the priority of execution and the degree of success based on a sensing of ground truth and consistency with White Cell intentions. A successful intelligence collection mission would provide the same quantity and quality of information expected from employment of the actual system(s). An unsuccessful mission would provide no information. Some disinformation may also be injected through this process.

Both the friendly and enemy intelligence systems operate in parallel to produce outputs for WCOPFOR and blue players. Scripting cell personnel coordinate blue intelligence reports with the WCOPFOR as a "reality" check. After coordination, scripting personnel record the prepared report by collector and sequenced in a journal. The cell maintains a hard copy of each report in a chronological file

for later use and reference. The WCOPFOR provides the intelligence scripting cell with background information needed to clarify the intelligence picture being created by the scriptors. The White Cell acts as a filter for information being processed from the WCOPFOR and Intelligence Cells. The White Cell also produces the EAC direction and guidance needed to drive planning.

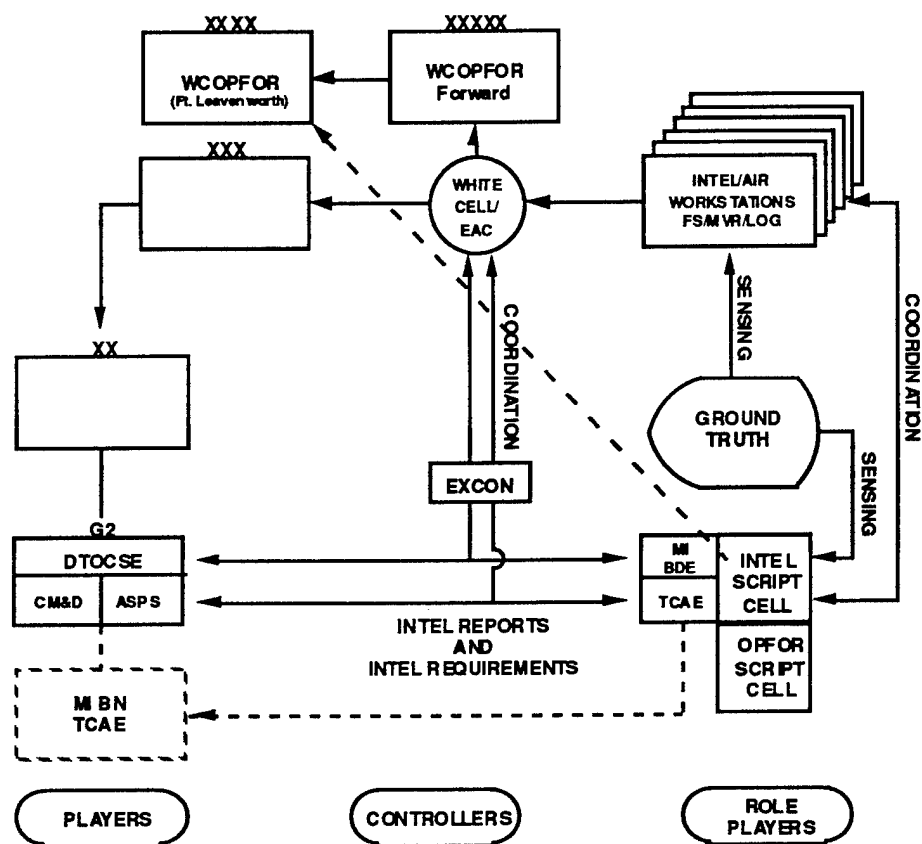


Figure 20. Warfighter Operations Intelligence Process

Scripting Cell personnel coordinate intelligence products with workstation controllers and between red and blue Intel Cells to ensure the passing of a coherent, logical portrayal. Blue intel may be passed to the training unit as a battlefield intel report from a unit in contact as a report from a unit managed collection asset, or from a higher headquarters asset. The White Cell also filters information to ensure consistency with the training objectives and conformity with the limitations of the collection platform. Red intelligence reporting activities process front-level collection through the White Cell and WCOPFOR control. The number of personnel allocated to each cell does have an effect on the volume and quality of scripted intelligence reports provided during the exercise.

EXCON Maneuver Cell. Each Warfighter Exercise requires a higher headquarters to perform critical functions normally associated with that headquarters in a tactical environment (Figure 21). The Maneuver Cell portrays the functions of both a Corps Main CP and an Army CP, depending on the level of the exercise. This Cell functions more like a player under the current concept with elements of an actual unit providing a commander and critical staff elements as well as fire support, logistic, and air Cells playing at workstations.

Prior to the exercise, elements of the Maneuver Cell actively participated in the OPLAN development process to support the Warfighter Exercise. The Exercise Director agreed upon and approved the area of operations at the Initial Planning Conference. The Exercise Director also approved the plan developed to support the training objectives selected by the rotation unit. BCTP staffed the finished OPLAN to ensure simulation supportability and then sent it to the unit approximately two weeks prior to the Warfighter.

The White Cell portrays EAC activities and filters truth getting to the higher headquarters element. This permits the deployed TOC to behave and respond like a player echelon. This adaptation enhances the quality of stimulation provided to the primary training unit, i.e., division and the training benefit to the corps.

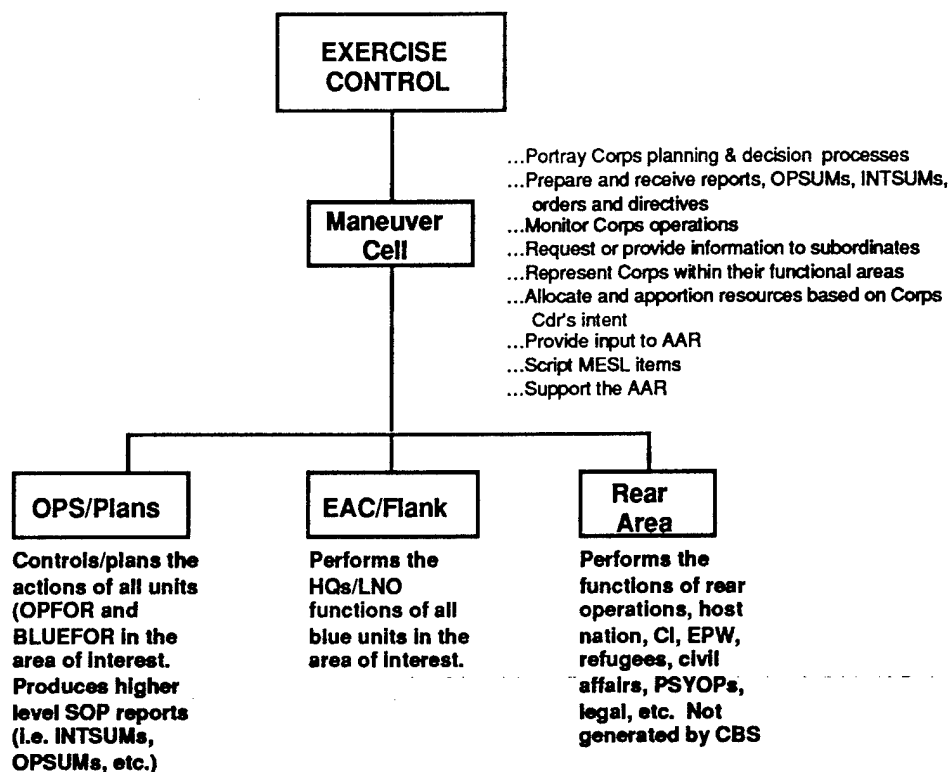


Figure 21. Maneuver Organization and Functions

EXCON Blue Air Cell. The Blue Air Cell (Figure 18) emulates the type and amount of support allocated to the training unit by its higher headquarters. It conducts the required planning and coordination to realistically portray the aviation dimension of warfare.

EXCON WCOPFOR Intelligence Cell. The WCOPFOR Intelligence Cell (Figure 18) implements the WCOPFOR intelligence collection plans. It looks after the interest of the RED reconnaissance and intelligence agencies portrayed in the game and prepares reports for the WCOPFOR based on information generated by BICM and scripting.

EXCON Special Forces (SF) Cell. The SF Cell (Figure 18), organized to support both red and blue player units, exercises the unique capabilities and effects that "special forces" can perform on the battlefield. Although this cell conducts competitive actions, it operates under the supervision of EXCON

due to the large amount of detailed coordination required with other elements within EXCON to accurately portray Blue SOF and Red SPF (Special Purpose Forces) operations and actions. SOF/SPF controllers cooperate to ensure correct and accurate emulation of available assets and keep the EXCON chief informed of their force status, on-going/planned missions and role-playing activities. Each sub-cell (SOF and SPF) responds to and executes missions they receive from their higher headquarters; i.e., Red SPF works for the WCOPFOR and Blue SOF works for the training unit. Neither is subordinate to the other and executes missions as directed by their player headquarters.

EXCON Workaround Cell. The Workaround Cell (Figure 18) has the responsibility of emulating equipment capabilities, combat actions, and a wide variety of other events that the current version of the simulation cannot perform. It is their mission to be neutral facilitators in emulating special actions to "make things work" for both Blue and Red commanders.

The graphic at Figure 22 depicts the interrelationship of the EXCON elements and other Warfighter functions.

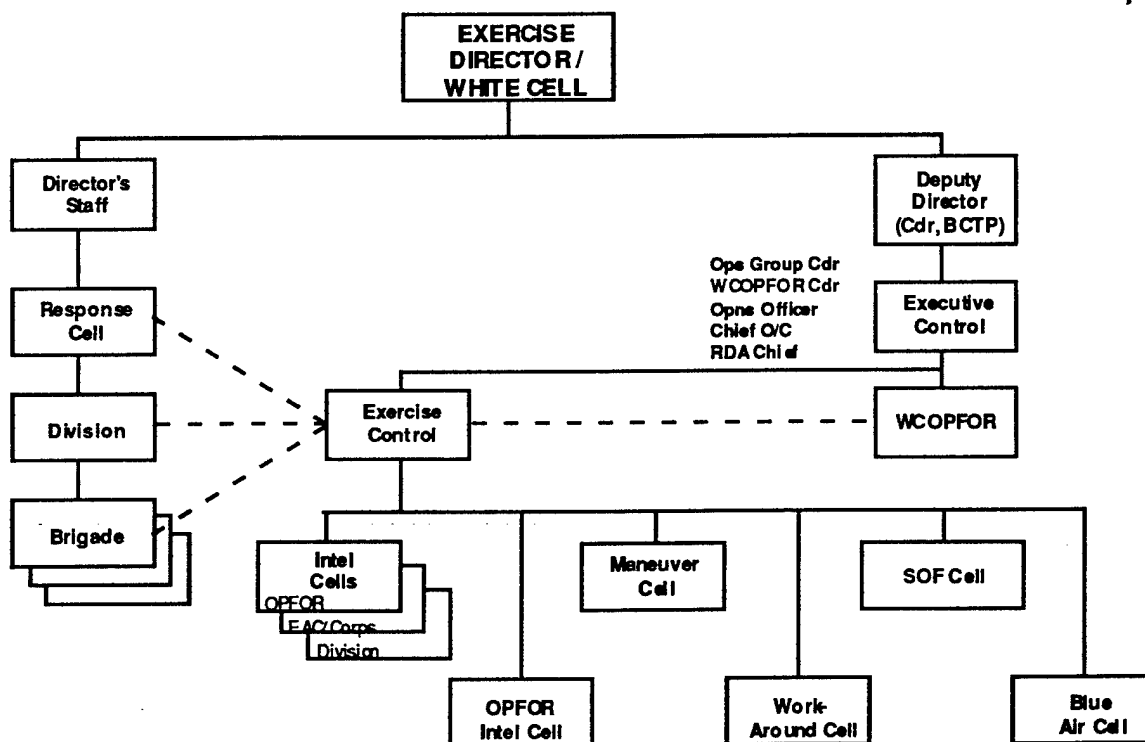


Figure 22. EXCON Warfighter Role.

Opposing Force (WCOPFOR) Operations

The BCTP WCOPFOR, developed to represent a competitive, thinking adversary, has become the standard against which BCTP and the Army measures all Blue performance. No longer is the WCOPFOR considered a training tool within the BCTP training concept. The WCOPFOR now possesses the resources capable of creating a "thinking red" commander and staff, capable of winning in a free play environment. The WCOPFOR is capable of replicating up to a Combined Arms Army tailored to a theater

of operations and can realistically replicate soviet or soviet surrogate decision processes and timelines. Its multi-echelon headquarters organization allows for skip echelon, deception activities, friction, and the fog of war.

The WCOPFOR contains a number of integrated workstations (Figure 23) that fight and sustain forces to regimental and battalion level. Additionally, there are air workstations to represent the air component available to the WCOPFOR.

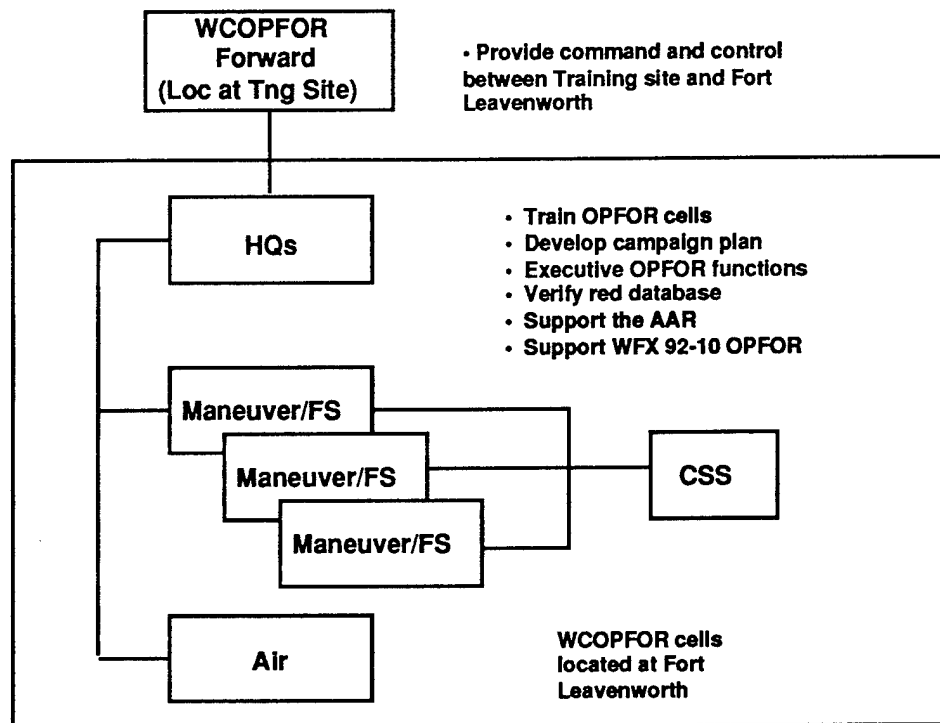


Figure 23. WCOPFOR Organization and Functions

The WCOPFOR Commander issues front-end directives, and orchestrates the campaign planning and correlation of forces computations. A WCOPFOR Cell, located in the BSC, facilitates coordination within the BCTP infrastructure. The WCOPFOR positions WCOPFOR headquarters players in the simulation center at Fort Leavenworth. The WCOPFOR mans and operates a number of integrated CBS workstations. At these stations, the WCOPFOR processes the logistics, fire support, and maneuver actions to the simulation for resolution. There are also WCOPFOR air workstations which conduct the air campaign for the front. Their function is to execute the campaign plan and communicate their intent through a communications network to the WCOPFOR Cell at the training site BSC. The WCOPFOR army and division headquarters compete directly with the blue player headquarters. They must coordinate the aspects of intelligence collection, fire support, logistics, maneuver, terrain management, and movement control among the WCOPFOR player Cells.

The WCOPFOR prepares for a BCTP Warfighter in parallel and in coordination with the BLUE Forces planning team. Figure 24 depicts the major events in the preparation of the WCOPFOR campaign plan and game board preparation. The WCOPFOR assigns a planning cell to prepare for the training event. The team obtains its initial guidelines from the exercise specifications, the unit training objectives,

and the conditions described in the higher headquarters plan. These documents allow the planning team to bound its domain and formulate a concept for its operations. The team calculates the WCOPFOR correlation of forces using the assumed combat power distributions from the input sources. The BCTP Commander uses these calculations for assessment of combat power ratio adjustments. His goal is a competitive situation where either side can achieve victory. Once WCOPFOR personnel establish the combat power ratios, the WCOPFOR Cell prepares a campaign plan and conducts the training needed to execute it in a simulation environment. WCOPFOR Cell transfers the STARTEX conditions to the Exercise database and verifies them prior to the training. They also prepare overlays displaying operational locations.

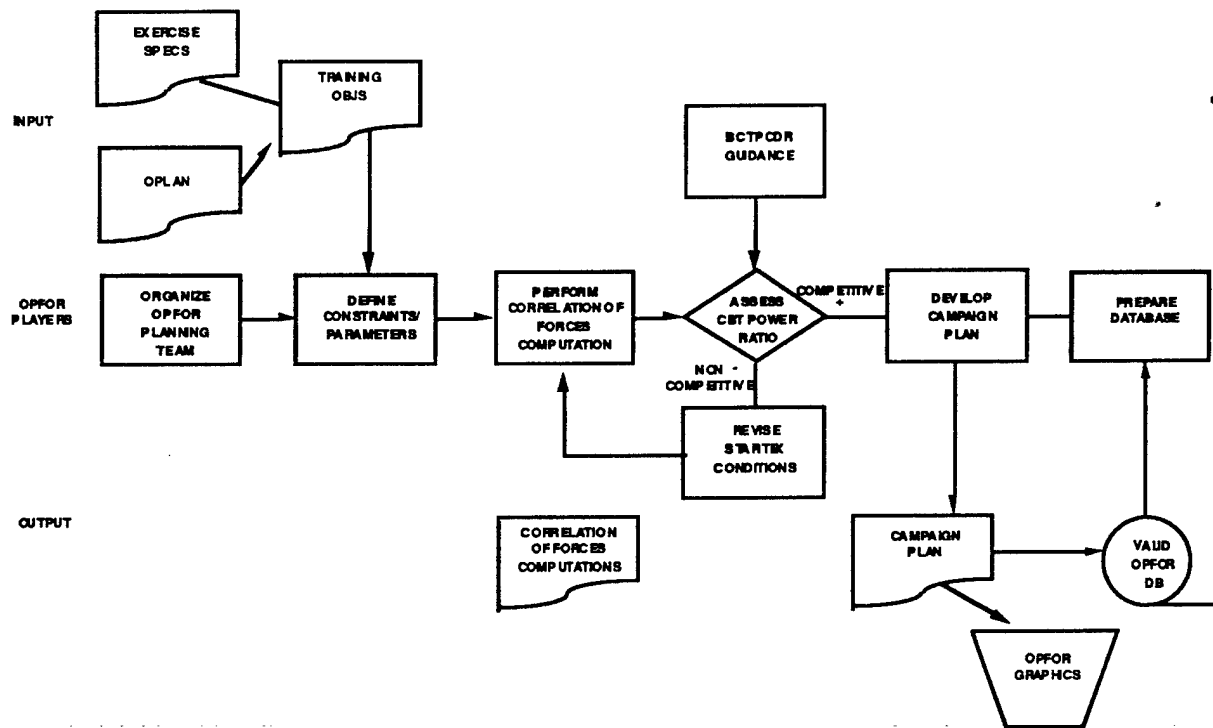


Figure 24. WCOPFOR Warfighter Preparations

Observer Controller Operations

The OC team is the critical interface between BCTP and the training audience for exercise feedback. The OC team monitors and observes operations from the deployed unit command posts in the field to collect data through direct observations and to coach when the opportunity permits. The OC team focuses its efforts on the main command post (Figure 25) where the OCs look for systemic and procedural issues that affect the unit's overall performance. OCs utilize an internal communications net to exchange information among the various command posts and with BCTP operations. Player communications supplement the OC net on a non-interference basis when distances exceed net capabilities.

The authorized OC organization remains austere, which occasionally produces missed observations while trying to capture data from personal observations, staff journals, records, reports, and documenting the effects of decisions or actions by commanders and staff. The high professionalism and positive attitudes of each OC team allows them to continue accomplishing their mission and achieve the excellent reputation they now possess. TRADOC schools and centers routinely provide augmentee OCs to make up required subject matter expert (SME) shortfalls.

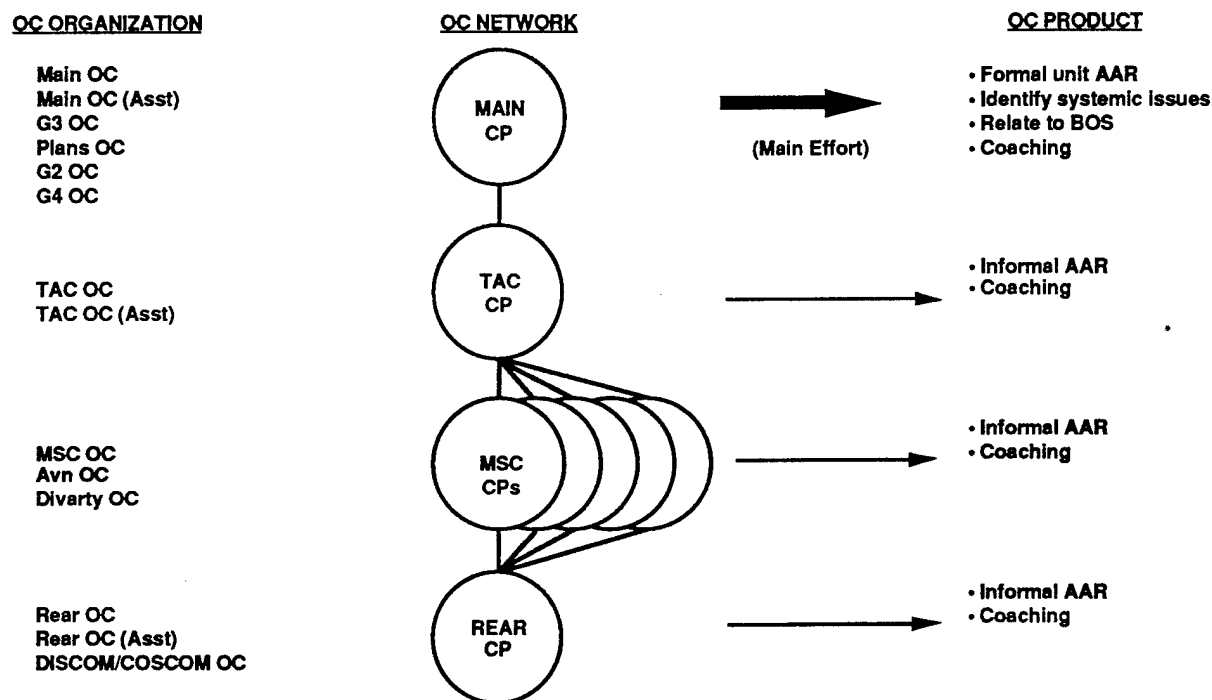


Figure 25. Observer Controller Network Organization and Functions

The diagrams shown in Figures 26 and 27 portray the life cycle planning and preparation of the OC team for each seminar and Warfighter Exercise. Not shown are the techniques used by the individual OC to collect data that pertains to his/her area of focus and to conduct informal AARs.

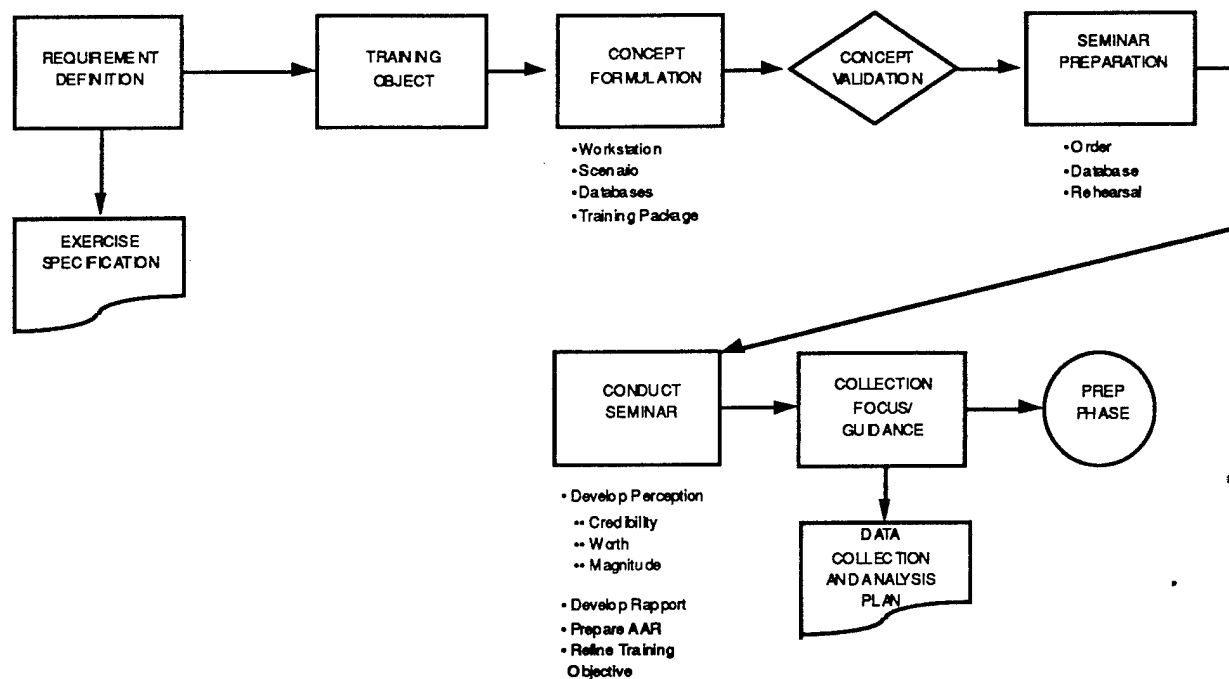


Figure 26. Observer/Controller Seminar Planning and Organizing Process

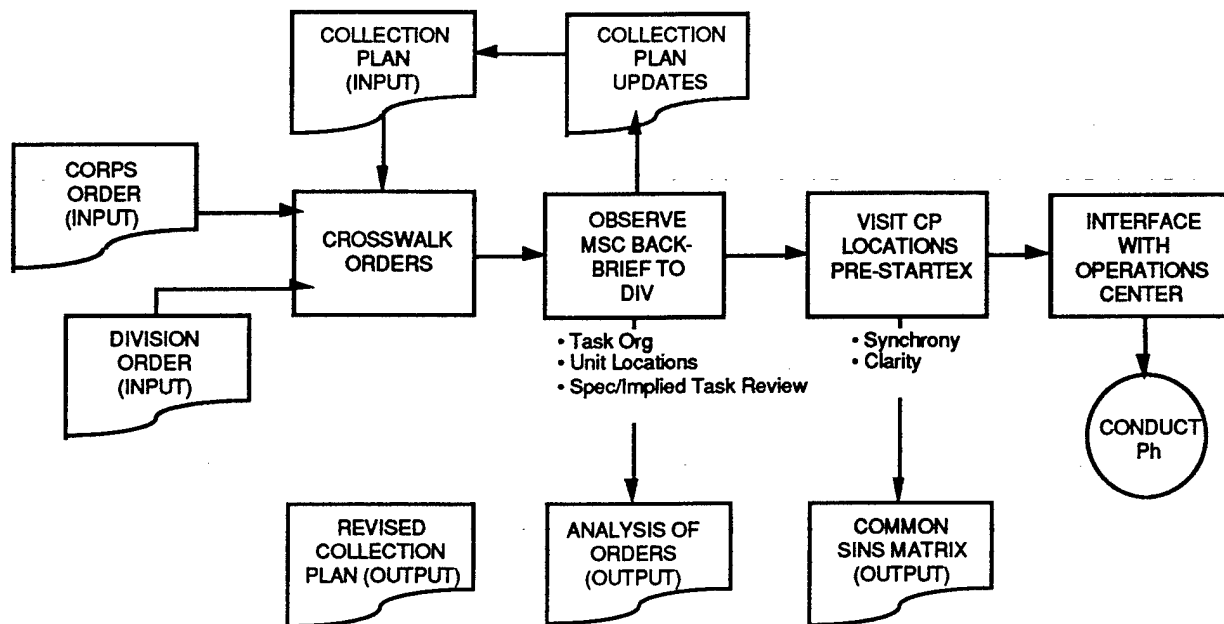


Figure 27. Observer/Controller Warfighter Preparation Process

The After Action Review (AAR) Process

The AAR, the exercise product most sought by the training audience, provides a one-of-a-kind objective measurement of performance training programs. The unit uses the results of the AAR to design training programs to improve its overall combat readiness by addressing command and control training deficiencies that cannot or would not otherwise be identified under normal home station training conditions. Objectives of the AAR process include:

- Providing the training audience the opportunity to discover and discuss training strengths and weaknesses as they occur during the exercise.
- Providing near real-time performance feedback to the training audience.
- Recommending/suggesting potential training solutions.
- Providing feedback through direct observation and audiovisual means.
- Providing the training audience a tangible product to assess training effectiveness and to develop future home station training programs.

The BCTP feedback system consists of four types of AARs (Figure 28). These AARs, conducted before and during the Warfighter Exercise, include a written take-home package developed at Ft. Leavenworth. It is difficult to assess the relative importance of these AARs; however, the formal Warfighter AARs and the take-home package seem to have the greatest impact on the training audience.

AAR TYPE CHARACTERISTICS	SEMINAR	INFORMAL	FORMAL	FINAL
Div Pri Tgn Audience	x	x	x	x
Subordinates		x		x
Scheduling	Time	Location	Event/Time	Time
Facilitator	BCTP	OC	BCTP	Div Commander
BCTP Role	Facilitate	Coach	Facilitate	Support
Focus	Team Building	Functional Process	Systemic	Linkage
Output	Training Issues	Functional Lessons Learned	Systemic Lessons Learned	Training Program Strategy

Figure 28. BCTP After Action Reviews

BCTP focuses collection on specific performance data, feeds these data to the Operations Center for collation and analysis, and conducts near-real-time after action reviews (AARs) for the training audience. The OC team supports the preparation of two formal AARs during the course of the average Warfighter Exercise. Figure 29 depicts the OC role during the AAR preparation.

The Operations Group Commander is responsible for facilitating the conduct of each formal AAR. A formal AAR normally lasts about two hours and includes an introduction, higher and lower mission and intent, significant themes observed during the exercise to the data cut-off point, a battle summary, WCOPFOR briefing, BOS charts, and concluding points. Each of these elements is designed to generate professional, insightful, open, and frank discussions of the unit's performance to identify

strengths and weaknesses. During the conduct of the AAR, the exercise does not "pause" because commanders and key staff are away from their duty stations, but continues to function with remaining elements in the command posts. OCs and contractor personnel support the AAR process by analyzing observations and developing extensive charts and graphs that support significant themes.

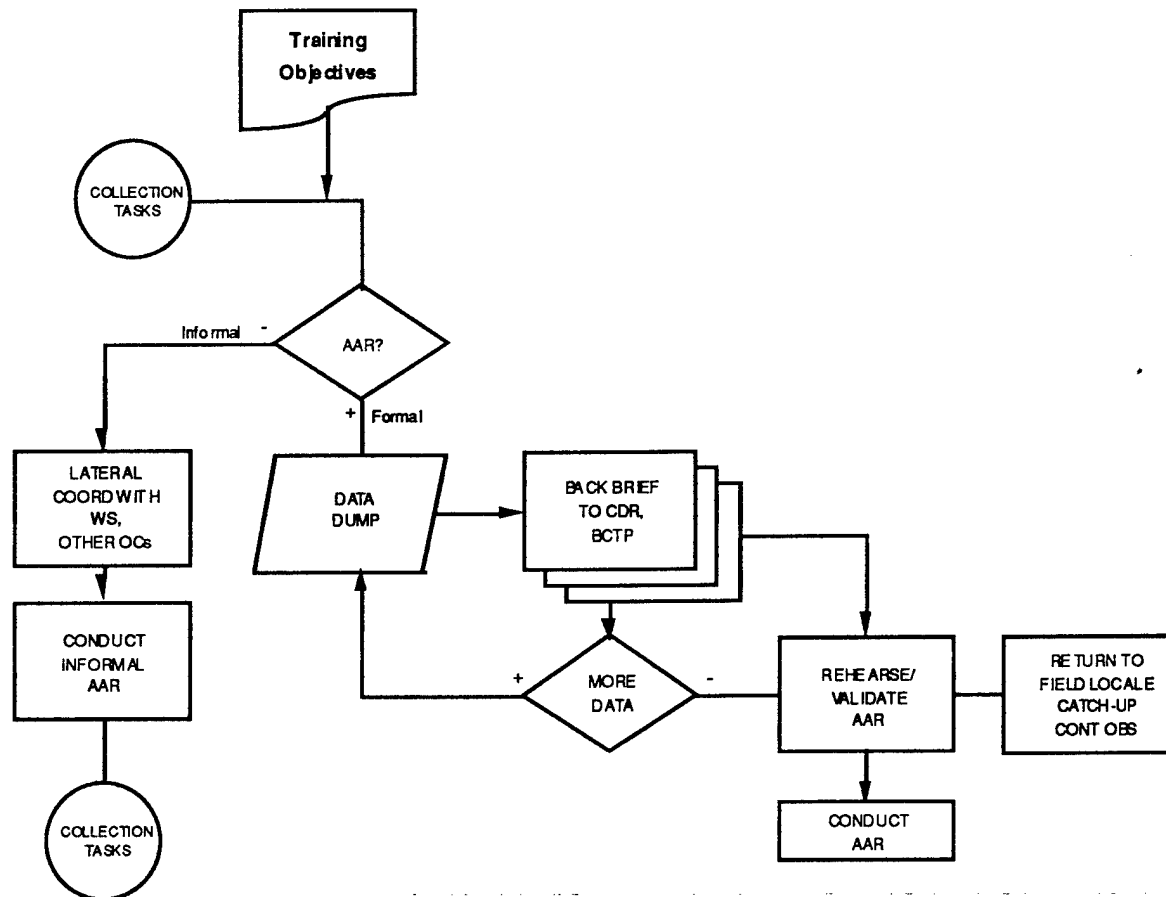


Figure 29. Preparation and Conduct of the AAR

The formal BCTP AAR model has a prescribed sequence of events that requires specific input and generates known outputs. The master events calendar contains tentatively scheduled formal AARs at the conclusion of each major mission or training objective. This AAR scheduling is flexible and permits accommodation of the tactical situations generated by unit decisions, WCOPFOR actions, and simulation input. This allows for specific milestones to be established for data cutoff, AAR production deadlines, and de-briefings to the senior controller who must facilitate the AAR.

Normally, four to six hours are allocated to prepare the two hour AAR. The BCTP Commander assesses when the training audience will complete the tasks needed to complete a major event and finalizes the schedule for the formal AAR. The BCTP Commander may also be aware of specific issues that should be developed by providing more information to the Operations Group Commander. He directs the collection effort by tasking the operations officer or the chief analyst for substantiating data and information.

The time and location of the AAR is established and disseminated through the Operations Center to the invited participants. The formal AAR involves only a specified audience that includes, but is not limited to, the commander, assistant or deputy commanders, brigade size and separate battalion commanders, and key members of their battle staffs. An overflow facility is normally established with remote audiovisual capability to allow as many subordinate commanders and staff personnel as possible the opportunity to watch and listen to the dynamics of the AAR process and the dialogue that takes place. All formal AARs are videotaped for later review by those members of the training audience that are required to remain at their stations to continue the exercise.

Battlefield Operating System (BOS) chiefs and selected OCs report to the OC Hooch approximately 6 hours prior to the AAR. They individually and collectively prepare a summary of their observations and coordinate with other OCs or their workstation controllers to clarify points and produce a coherent description of events. The BCTP Commander, Senior Observer(s), and Operations Group Commander conduct a detailed back-brief with the OCs to derive a sense of how the unit performed and to finalize key event topics for discussion during that particular AAR. Both the BCTP Commander and the Operations Group Commander normally pose questions which require further research by the OCs. From these discussion sessions, the key points and supporting presentation methodologies for the AAR are formulated and agreed upon. The Senior Observer is encouraged to actively contribute to the discussion and provides valuable input into the process. AAR preparations, e.g., charts, facilities, are left to the operations officer while the Operations Group Commander finds a quiet area to prepare his notes and rehearse.

The higher commander initiates the AAR by restating his mission and his intent for the accomplishment of that mission. This initial step establishes the context for the remainder of the AAR. The facilitator elicits and records comments from the training audience concerning unit performance strengths and weaknesses recorded for later use during the final AAR. This is followed by a chronology of events that occurred up to data cut-off frequently referred to as the "battle summary" or the "7 minute war." This is followed by a briefing, via telephone link with Ft. Leavenworth, by the red force commander. This portion of the AAR allows the training unit to compare the red plan with what they thought he would do and discuss the effect of friendly decisions and actions on the enemy unit. The facilitator then begins to address significant themes identified during the AAR preparation and highlights, supports, substantiates the validity of those themes with products developed from the simulation. Following discussion of the themes, the facilitator reviews each battlefield operating system to highlight areas that the unit did very well and poorly. With summary remarks by the senior OC, the unit commander and the higher commander, the AAR is ended and participants return to their units and duty stations to continue the exercise.

VIII. BCTP DATA DESCRIPTION

Based on this analysis, we can isolate several primary sources of BCTP training data available through each Warfighter Exercise. We can also identify secondary sources of useful data created from the primary BCTP data. Each element capable of producing data does so to support a specific aspect of the training environment and objectives. The following discussion outlines the data which are currently created during a BCTP rotation:

- **Corps Battle Simulation (CBS) computer data tapes** record a history of BCTP exercises as they occur on the CBS simulation. The data are captured at fixed intervals during the exercises to allow CBS replay/restart at a later time. CBS data provide the tactical framework for BCTP exercises. With the proper hardware and software, CBS data can be used to recreate BCTP exercises in their entirety.
- **Battlefield Intel Collection Model (BICM) data** are produced in support of intelligence assets placed during BCTP exercises. Information regarding the use and emplacement of intel assets is input into BICM, which interfaces with the CBS to produce intelligence spot reports which simulate the utilization of, and input from, those intel assets during the exercises.
- **The Intelligence Journal System** is a repository for the intel reports which get disseminated to the units.
- **Observer/Controller (OC) notes and checklists** provide the most voluminous source of evaluation data for any CTC. OC notes vary from those carefully organized by echelon and battlefield operating system (BOS) and tied to specific relevant doctrine to notes saved in a personal shorthand known only to the author. The point is that OC notes are taken and used for the primary CTC mission of training; they are not written, or intended, for posterity. How an individual OC takes and organizes his/her notes is a function of a personal approach to the job, and what works. It is recognized that OC notes represent a valuable source of data which can be applied for the betterment of the Army.
- **Automated Journal System reports** were intended as an automation step in capturing input from the OCs and other BCTP personnel. The intent was to provide standard input forms for OCs and workstation controllers. The use of the AJS has been spotty.
- **BCTP Analyst (contractor) generated data** is generated by the BCTP analysts who, by virtue of their experience and familiarity with BCTP operations, are able to contribute special graphics or summaries which contribute to understanding the ongoing exercise.
- **WarFighter After Action Report System (WAARS) generated reports** are computer listings produced from the CBS. The listings include a variety of BOS-related data concerning all facets of the BCTP exercise.
- **Unit-generated data (plans, orders, directives, FRAGOs)** form an important paper trail of the BCTP exercises. They are retained by the BCTP operations group in their original form.

- **The OC crosswalk of the unit Op Plan and Tactical SOP** provides an important source of information for later diagnosis of problems, as well as an insight into the planning process itself.
- **After Action Review (AAR) video tapes and hard copy material** provide a source of aggregated/abbreviated exercise material and indicate the points which were considered most important by the BCTP staff.
- **The Final Exercise Report (FER)** contains a record, by BOS of the most important evaluations retained by the OCs. The FER is in narrative form and is sent to the trained unit after the Warfighter Exercise.
- **The Proficiency Sustainment Package (PSP)** contains specific recommendations to the unit for attaining and/or maintaining proficiency. The PSP is prepared by BCTP contract personnel and contains specific vignettes drawn from the completed Warfighter Exercise.
- **WCOPFOR-generated data (directives, plans, intel reports, etc.)** are similar to the unit-generated data discussed above. These data are most useful in recreating specific segments of an exercise in searching for why something did or didn't happen.
- **White Cell directives** are issued during BCTP exercises regarding the conduct of the exercise and specific direction regarding data collection efforts. The White Cell is composed of the BCTP Commander, the OPFOR Commander, and the OC Chief.
- **The Army Command and Control Evaluation System (ACCES)** is a narrowly focused data collection effort which has been designed for the analysis of C2 processes/issues. Collection of ACCES data is manpower-intensive, and is beyond the scope of routine BCTP data collection efforts.
- **The Final Exercise Report (FER) Database** maintained by CAC-TNG CALL is a derivative, DBase-compatible database within which FER paragraphs, along with evaluations by experienced military personnel, are stored. The FER database references specific observations keyed by rotation, echelon, BOS, sub-BOS, and specific doctrine reference when applicable. Users can aggregate evaluations using any combinations of the keys.

BCTP data are categorized in Table 1 according to type, format, source/derivation, BCTP use, and potential research database use. Data types which are considered to be primary are in boldface; the others are derived from one or more of the four primary types.

Table 1. BCTP Data Types

Data Type	Format	Derived From	BCTP Use	Potential Utility
OC Observations	Paper, varied	Direct Observations	AAR, FER, PSP	Performance Evaluation
Automated Journal System	Computer files	OC and other BCTP Ops group observations	Automate observation inputs	Observation database
Battlefield Intelligence Collection Model (BICM)	Computer Model	Unit & OPFOR intel asset inputs	Produces Battlefield Intel Information	Timing, content of intel reports
Intelligence Journal System	Automated, paper report	BICM	Stores intel reports	Analysis of intel report contents
Corps Battle Simulation (CBS) Data Tapes	Computer Model, Checkpoint Tapes	Scenario input, updates by unit	Archive CBS operation	Replay BCTP Missions; generate intermediate statistics
Analyst generated data	Reports, graphs	Analyst Workstations tapping CBS data	Supplement OC observations	Improve depth of knowledge about exercises
WarFighter After Action Report System (WAARS)	Computer Listing	Periodic CBS data dumps	Provides a variety of interim summaries from CBS	Contributes to problem diagnosis
Unit & OPFOR-generated data (plans, orders, etc.)	Paper	Unit operations	Provides background for missions	Evaluation of planning and execution processes
After-Action review (AAR)	Video tape, paper	OC Observations, Analyst Data, WAARS	Unit feedback	Shows training points emphasized by BCTP
Final Exercise Report	Paper	OC Observations, AARs, Analyst Data, WAARS	Unit Feedback FER Database	FER Database
Proficiency Sustainment Package (PSP)	Paper, video	OC Observations, FER, Analyst Data, AARs, WAARS	Guidance to trained units for sustainment	Background
White Cell Directives	Paper	White Cell (BCTP Cdr, OPFOR Cdr, OC Team Chief)	Guidance of exercises to meet training objectives	Understanding of training environment
Army Command and Control Evaluation System (ACCES) (ARI-LVN)	Database	Observations by special observers, at selected rotations	None	C ² Issues
FER Database (CALL)	Database containing FER text keyed by echelon, BOS, sub-BOS, and evaluation	FER + SME	Review of past BCTP exercises	Quick-response analysis of issues from Army agencies

The four primary data types are OC observations, unit/OPFOR-generated data, White Cell directives, and CBS data. A simplified representation of relationships among the data types is shown below in Figure 30.

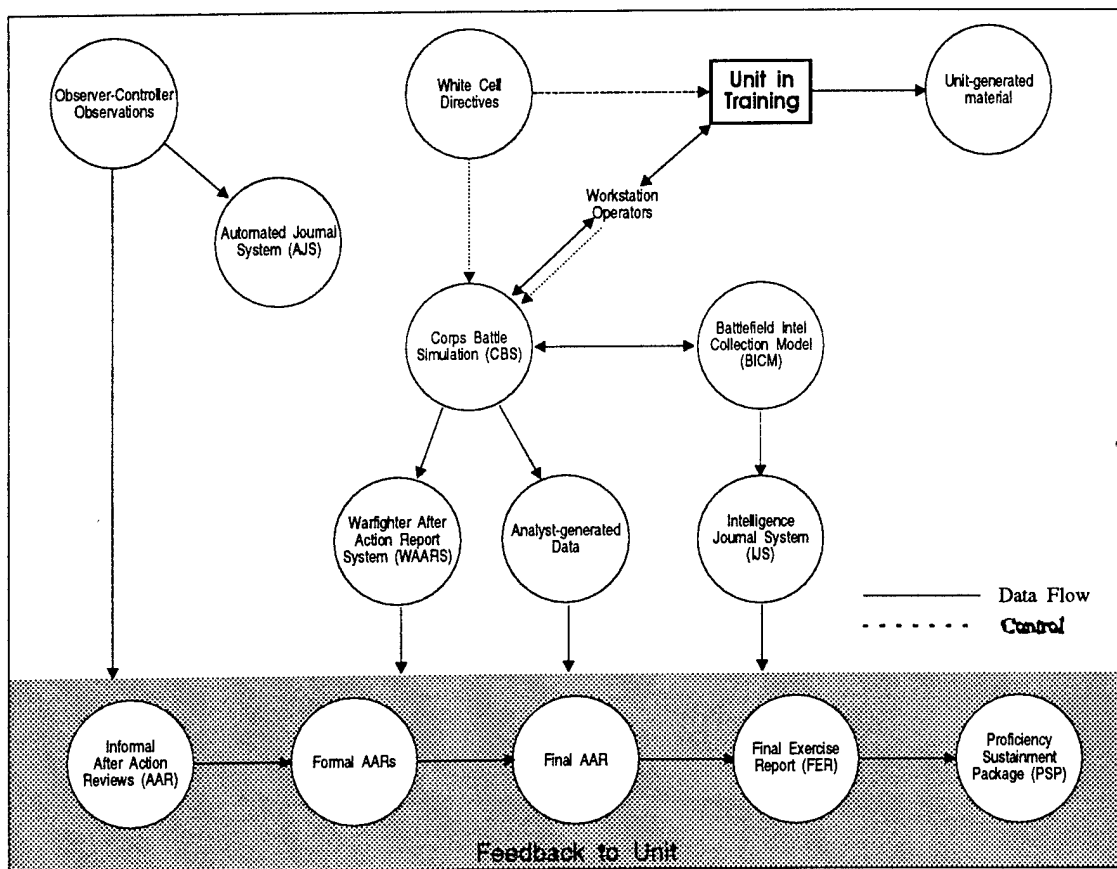


Figure 30. BCTP Data Flow

The most valuable single source of data is the OC observations. These observations are the only source of subjective information about unit performance. OCs are intimately familiar with doctrine and have generally been involved in several BCTP rotations, giving them a fine sense of what's important to attaining mission objectives and making their observations consistently relevant. OC observations may be directly correlated to Army doctrine, providing analysts a framework to compare one BCTP rotation to another, or to compare BCTP data to relevant data from the other Army Combat Training Centers.

White Cell directives and CBS data are essentially non-evaluative, neutral information which may be used to reconstruct BCTP exercises and/or gain a deeper understanding of the BCTP exercise. CBS data provide hard statistics and counts of what happened during the exercises, while White Cell directives may help to understand the shape of the exercise.